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April 8, 2002



Jefferson County
department of community development

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April 8, 2002

Mr. Gordon Gibbs
SEPA Responsible Official
DNR Olympic Region
411 Tillicum Ln
Forks WA 98331-9797

Dear Mr. Gibbs:

Subject: jefferson county comments on the *mats mats quarry operation draft environmental impact statement* (DEIS)

Jefferson County submits these comments regarding the *Mats Mats Quarry Operation Draft Environmental Impact Statement* (DEIS) dated January 2002 and received by the Department of Community Development on February 1, 2002. The comments in the body of this letter pertain to the specific sections of the DEIS document as outlined. The bulleted list directly below summarizes the concerns of Jefferson County.

SUMMARY OF CONCERNS

- ξ Groundwater protection. The DEIS concludes that there are no significant impacts anticipated to neighboring wells or to future residential development on the site. There are no guarantees offered to the neighbors or the County, however, and the Groundwater Monitoring Program in Appendix IX is outdated and insufficient. A performance bond or some other mechanism, such as an applicant contribution to a public water system or guaranteed replacement of affected wells, may be appropriate. 1
- ξ Air pollution. A model was selected to definitively address concerns that airborne particulate matter from the Quarry is negatively influencing water quality and aquatic habitat in Mats Mats Bay. Without physical data and comprehensive study, the conclusions fall short of definitively addressing concerns expressed by citizens, the Washington Department of Fish and Wildlife (WDFW), the Washington State Department of Ecology (Ecology), the Olympic Air Pollution Control Authority (OAPCA), and others. Needs additional 2

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monitoring and analysis. The rate of fill reported in the DEIS is not consistent with recent information submitted by Harold Holmberg, a resident of the Mats Mats Bay area, nor does the DEIS effectively explain the discrepancy.

- ξ Nitrate-nitrogen concentrations in discharge to Mats Mats Bay. The conclusion that the Quarry does not and will not contribute to further water quality degradation in Mats Mats Bay through nitrate-nitrogen loading is tenuous and not supported by the two samples collected within the past five years or any current water quality characterization of the Bay. It is noted in the DEIS that there is no background data available. Why was data not collected? Needs additional monitoring and analysis. 3
- ξ Land use and shoreline. From a regulatory standpoint, importation by barge of fill material is not a historical use. Reclamation has not occurred concurrently with excavation. Thus, a shoreline permit is required for this activity (see Ecology letter). Past mining encroachments within the 200-foot shoreline jurisdiction of the Shoreline Management Act are not addressed in the DEIS. Appropriate and commensurate mitigation is necessary to compensate for past mining practices within shoreline jurisdiction. This may be achieved through a buffer restoration plan that includes reclamation and re-vegetation of mined areas within shoreline jurisdiction and the establishment of additional buffer area of equal size and value to the area mined within shoreline jurisdiction. The County notes that there is an approved buffer restoration plan that has not been implemented. 4
- ξ Reclamation. The County notes that the Clean Soil Acceptance Policy is acceptable to DNR, based on DNR statements at the DEIS public hearing. However, questions remain about the implementation of that policy in regard to monitoring and assurance. How will each shipment of fill be tested? How will the public and Tribes be notified? How will environmental quality of the reclaimed site be monitored after reclamation? Where is the analysis and conclusion that the imported fill will satisfy environmental health standards for future on-site sewage systems? Without this conclusion, is residential development on the reclaimed site a realistic future use? 5
- ξ Mitigations. Though there are a number of potentially effective mitigations offered in the DEIS, Jefferson County suggests that the Department of Natural Resources (DNR) give consideration to the list of additional mitigations offered by the Mats Mats Area Coalition, State agencies, and Jefferson County. 6

Following is a page-by-page description of questions and concerns that the County requests DNR to address in the Final EIS (FEIS):

CHAPTER 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.3 Historical Mining Activity

p.2-3: Jefferson County is unaware of any barge unloading that is conducted on the site. The proponent has provided no documentation of this activity. It is our understanding that reclamation to date has not been following the model of mining and reclaiming section by section. Where has reclamation occurred that utilized imported fill? 7

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2.4 Site Characteristics

p.2-3 Vegetation. Although a 200-240-foot buffer is purported, there is no mention of a shoreline violation and resultant enforcement action taken by Jefferson County during the tenure of Glacier Northwest, Inc. The proponent submitted a buffer restoration plan that DCD approved for implementation. As the plan includes provisions for notifying DCD before the work commences and DCD has not yet been notified, our assumption is that the buffer restoration has not begun. This history should be part of any description or analysis of the 200-foot shoreline buffer.

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p.2-3 Land Use Designations and Zoning. The correct title of the set of Jefferson County development regulations to implement the *Comprehensive Plan* is the Unified Development Code (not Uniform). Elsewhere in the document, the reference is correct.

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2.5 Description of Operations

p.2-5 Ground Preparation. Is the correct reference Figure 2-2, rather than Figure 2-1?

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p.2-6 Phased Mining Operations. 2023 is stated as the approximate end of mining activity under the Proposed Action. On p.2-5 and elsewhere the year 2025 is cited. It is understood that either of these numbers is an approximation. Nevertheless, it may be best to consistently cite the same year to avoid confusion. For example, is the two-year difference related to the approximate life of the mine or to the timeline for reclamation?

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A question related to the current depth of the mine lingers. Why did General Construction mine to -13 feet MLLW and Glacier Northwest to -7 feet MLLW, according to the DEIS at p.2-6, when the relevant DNR Surface Mining Permit contains a vertical mining limit of +/- 1 foot MLLW? Who is responsible for overseeing mining depth? When was mining depth last checked by a regulatory agency? Who will check mining depth in the future? How will the regulatory agencies know if the mining operations at Mats Mats Quarry extend deeper than the proposed -60 feet MLLW, if approved?

12

p.2-8 operating hours. The Jefferson County UDC at section 4.24.6 states that hours of operation shall be between 7:00 a.m. and 7:00 p.m. on weekdays, "... unless extended hours of operation are authorized by the Administrator." In order for barging to "... occasionally be conducted on a 24-hour basis, depending on market and tidal conditions," the Quarry operators must first seek and obtain authorization from the UDC Administrator for each and every instance of operations, including barge loading and unloading, outside of the normal operating hours, regardless of frequency. Please insert this language into the DEIS at all instances where the 24-hour barge loading and unloading proposal is referenced.

13

p.2-9 imported soil. It is stated that approximately 140,000 cubic yards of clean soil has been imported to the site and stockpiled for reclamation. Where is this material located? Has DNR overseen this enterprise? Is there documentation that this fill meets the Clean Soil Acceptance Policy described in Appendix F? Why did the Quarry operators neglect to inform Jefferson County and apply for a shoreline permit under the Shoreline Master Program for this activity?

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CHAPTER 3.0 AFFECTED ENVIRONMENT, IMPACTS, ALTERNATIVES, MITIGATION MEASURES AND UNAVOIDABLE ADVERSE IMPACTS

3.1 Earth

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p.3.1-1. Where is the Shannon & Wilson, Inc. peer review of the Hydrogeologic Evaluation by AESI documented? Is there a written description of the peer review available? Did DNR select and contact Shannon & Wilson, Inc.? Was the proponent involved in the selection or contracting of the peer review firm, and if so, how?

15

3.1.1 Affected Environment. What was the scale of the 1991 Yount and Gower regional geologic map? In the context of the scale of that study, what is the probability that the 1991 analysis may have missed a significant (i.e., less than "major," but significant nonetheless) fault or fold in the immediate vicinity of the site?

16

What is the probability that among the "many more [unmapped] individual flows area present beneath the covered areas" there are features that may have impacts on groundwater quality and quantity? In other words, does this absence of information affect the reliability of the conclusions in the Hydrogeologic Report?

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3.1.2 Impacts of the Proposed Action

p.3.1-4 Potential Slope Stability Issues. It is stated that the estimated increase in the total rate of marine water seepage from 5 gpm to 25 gpm is "relatively minor and would not be anticipated to result in any significant impacts." Comments on the DEIS to date have extrapolated these data to estimate total gallons of marine water seepage. The magnitude of the extrapolated figures raises questions. Firstly, did AESI or DNR arrive at the same estimated number of total gallons of marine water seepage through the life of the mine under the Proposed Action? If so, where is the plan to address the marine water seepage before reclamation? Where is the analysis regarding the impact of the total volume of marine water seepage on future wells on the site for post-reclamation development? If AESI and/or DNR have alternative estimates for the total anticipated volume of marine water seepage, what are those estimates and again, where is the plan to address anticipated volumes of marine water seepage during and after mining and reclamation?

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p.3.1-5. Please explain in more detail the "factor of safety" in highwall stability analysis. Which conditions are more dangerous, non-seismic or seismic? Intuitively, it would seem that seismic conditions are more dangerous. Why then is the factor of safety considered safe under seismic conditions (1.15) actually lower than that for non-seismic conditions (1.5), assuming the higher the factor of safety, the safer the highwall stability?

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3.2 AIR: 3.2.1 Affected Environment

p.3.2-2 Existing Air Quality. Why are there no ambient measurements of particulate matter concentrations for the specific project area? Would this type of data be useful and if so, can collection of this type of data be required of the proponent in an effort to ensure regulatory agencies, the public, and the neighbors in particular, that activities at the Quarry are not responsible for water quality impacts to Mats Mats Bay? Without documentation that demonstrates otherwise, the appearance is that Quarry activities do indeed influence siltation in the Bay.

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According to the DEIS, the primary source of particulate matter from the site is vehicle traffic on unpaved roads. On p.3.3-9, blasting is cited as a potential source of particulate matter in a mining operation. Considering that there is documented evidence of basalt siltation in Mats Mats Bay (see comment letter from the Washington Department of Fish and Wildlife), has this scenario been sufficiently considered and addressed in the DEIS? Jefferson County cannot agree that the Quarry is not having an adverse impact on Mats Mats Bay.

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On February 15, 2001, staff from this Department conversed with Richard Schipanski, the EIS

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coordinator for the consulting agency Huckell/Weinman Associates, about the air quality analysis. When informed by Mr. Schipanski that MFG, the firm that performed the air quality analysis, chose to model the dispersion of airborne particulates rather than conduct any physical tests in the vicinity, such as data collection from screens or catchments over various time periods, staff asked Mr. Schipanski to consider these or other field methods. Mr. Schipanski stated that he would consult with MFG regarding the practicality and functionality of conducting field tests to answer the basic question: are airborne particulates from operation of Mats Mats Quarry influencing Mats Mats Bay? This Department did not hear from Mr. Schipanski about the possibility of collecting physical data in the vicinity for comparison with the modeling results. Judging from the information in the DEIS, data of this nature was not collected. Please comment as to why this choice was made and the reliability of modeling without a parallel data collection methodology in the face of documented evidence of basalt siltation in Mats Mats Bay. Even if experts agree that modeling alone is sufficient and appropriate to answer this question, it is unclear in the DEIS how the influence of vegetation is considered in the deposition model. It is stated that the channel between Admiralty Inlet and Mats Mats Bay does not contain a large enough surface area to impact the Bay, even though prevailing winds encourage deposition in the channel. What about particulates that are intercepted by trees and other vegetation and then later deposited into the surface waters via wind and rain? Has this scenario also been ruled out as having a potentially significant impact to the Bay? If the answer is yes, please state so in the FEIS.

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The Olympic Air Pollution Control Authority (OAPCA), in a comment letter dated March 13, 2002, outlined missing information, analysis, and mitigation commitments regarding air quality. Judging from the OAPCA letter, the statement at p.3.2-3 that "OAPCA's basic criterion to determine the adequacy of air pollution controls for a fugitive dust source is the prevention of visible dust leaving the site" seems questionable. The letter appeared to indicate that OAPCA continues to be concerned about compliance at Mats Mats Quarry, contrary to the message in this section of the DEIS that OAPCA is currently satisfied with the operations and mitigation measures at the Quarry. Regarding mitigation measures, on p.3.2-9 the DEIS states that the operator "... currently implements measures to control dust emissions from the site." Would these measures be in fact all of the "best available control technology to limit particulate matter emissions" cited on the same page? The OAPCA letter suggests that the answer is no. In summary, Jefferson County fully supports OAPCA's comments and expects the FEIS, and operations at the Quarry regardless of the Alternative selected, to address them adequately. It appears at this stage that the impacts from the basalt dust remain unmitigated and have a probable adverse impact on Mats Mats Bay.

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3.3 WATER: 3.3.1 Affected Environment: Surface Water

p.3.3-1 Surface Water Quality. The DEIS states that "water quality data characterizing the existing condition of Mats Mats Bay itself is not available." Has a thorough survey of existing information been conducted by those who prepared the document? For example, an HLA/Harper-Owes report dated December 5, 1989 and entitled, "Circulation and Water Quality of Mats Mats Bay" provides at least some degree of background information. Additionally, why was no background information collected? If the claim from the applicant and the conclusion of the SEPA lead agency is that no significant water quality impacts would occur in Mats Mats Bay from the proposed action, how is this finding to be confirmed in future periodic review if there is no information as to the current water quality of the Bay? Jefferson County firmly contends that the responsibility of demonstrating continued water quality maintenance in Mats Mats Bay belongs to the applicant. If the No Action Alternative is selected, perhaps conclusions may be drawn at some future date about what type of influence the Quarry had on the Bay during its operation. The applicant proposes to extend the life of the mine for another twenty years or so. Thus, the burden is on the applicant to not only demonstrate that the current situation in the Bay (evidence of sedimentation and nitrate loading) is not due to operations at the Quarry, but that continued operations at the Quarry would not and are

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not exacerbating water quality degradation in the Bay.

p.3.3-3. Have background nitrate-nitrogen concentrations in Mats Mats Bay been collected for this EIS, and if not, why?

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p.3.3-5 Groundwater. The County continues to have questions about the certainty of the conclusions regarding potential impact to groundwater on- and off-site and the solutions and guarantees proposed by the applicant if groundwater degradation were to occur in the future. The comments of Ecology, Ms. Colette Kostelec, and other qualified professionals merit careful consideration and explicit response in the FEIS.

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Aquifer Characteristics. Why were aquifer slug tests performed in only 20 of the 33 exploration borings?

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p.3.3-7. Results of tidal response monitoring are reported for 10 of the exploration borings. Were the other exploration borings monitored for tidal response?

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Saltwater and Freshwater Seepage. Why compare the rate of marine water seepage to runoff from a rainfall event? Please explain the relationship between the stormwater management plan and the potential effects of marine water seepage. Is stormwater runoff expected to combat marine water seepage or will stormwater be collected for discharge at the two NPDES discharge locations?

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p.3.3-9. If seawater intrusion is acknowledged through study to be "an increasing problem in the Mats Mats area," how would the Proposed Action or Limited Mining alternatives avoid contributing to this "increasing problem"?

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3.3.2 Impacts of the Proposed Action

p.3.3-9 Surface Water: Turbidity and Sediments. It is stated that blasting would generate dust and fines. Elsewhere, vehicle traffic on unpaved surfaces is cited as the principal generator of dust and fines. To what degree does the air quality model take into account dust and fines generated from blasting? How are potential surface water impacts from blasting related to the air quality analysis?

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Has the damaged barrier separating the old dock area on the west side of the Quarry, where the two NPDES discharge points are located, from Mats Mats Bay been repaired? If not, when will the barrier be repaired and to what degree has its condition contributed to water quality degradation?

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3.3.10 Phosphorous and Nitrogen. Again, it appears that background nitrogen data for Mats Mats Bay would not only be useful, but essential in determining the current and projecting the future impact of discharge from the Quarry to the water quality of the Bay. There is no discussion in the section as the relativity of the two measurements referenced (1.86 mg/L and 2.86 mg/L) to any kind of standard, though in the Appendix it is reported that these measurements exceed accepted standards. The apparent logic of this section is that there have not been enough nitrogen measurements taken, so therefore, even though the two that were taken exceed accepted standards, there is no reason to believe that either there is a related problem in Mats Mats Bay or that Quarry discharge does or will contribute to present or future problems associated with nitrogen loading. If the County has misunderstood the message of this section, please clarify and explain.

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p.3.3-11 Temperature. In this section, it is stated that, "Temperature will be monitored during summer months in the future, if required under the NPDES permit." Later on p.3.3-14, under mitigation measures, it is stated that, "Although not required as part of the NPDES permit, monitoring of nitrate-nitrogen is proposed." Which statement is more accurate? In other words,

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will temperature be monitored regardless of or dependent upon the NDPES permit?

Oil and Grease. A similar question arises in the next section. Are there spill provisions and on-site equipment available now as part of a Stormwater Pollution Prevention Plan and/or Spill Response Plan now or are these measures proposed? Perhaps a better question is: what types of stormwater pollution prevention and spill response measures are in effect now compared with what is proposed?

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Reclamation Plan. It is stated that Admiralty Inlet is a favorable discharge zone (assumedly in comparison with Mats Mats Bay). If this is the case, why are the two NPDES discharges connected to Mats Mats Bay? Is this purely historical or a matter of convenience?

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It is stated that a "200-foot *permanent* setback would be established along the shoreline of both Mats Mats Bay and the Admiralty Inlet" (emphasis added). Please explain this further. Has the setback not been established to date? As stated previously, a mining violation has occurred within the 200-foot shoreline buffer. To our knowledge, the accepted buffer restoration plan has not been implemented. Would this permanent setback be indeed permanent or for only as long as it takes to complete the reclamation? If the applicant is proposing a permanent setback, how would the 200-foot setback be established (e.g., via notice to title or conservation easement or similar device)? Under the current County shoreline regulations, the shoreline setback is one foot for each foot of vertical bank height. If the setback is not proposed to be permanent—in other words the applicant does not intend to limit future residential development within the 200-foot setback—please state so.

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p.3.3-12 Groundwater: Water Seepage. Again, why compare the surface water runoff with the anticipated marine water seepage (see previous comments)? Regarding the discussion of Highwall Stability Analysis and excusing our lack of understanding of the factor of safety for this analysis, please explain how a lower factor is considered safe for seismic conditions. It appears that a higher factor is safer; are seismic conditions considered safer (i.e., require a lower factor of safety, 1.15 as opposed to 1.5) than non-seismic conditions. Intuitively, that seems odd. Thank you in advance for clarifying this point.

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Off-site Wells. The DEIS states that, "The continuation of mining activities is *not expected* to impact the quantity or quality of groundwater in existing off-site wells" (emphasis added). The County and the neighbors desire and need more assurance than the level of assurance offered in this statement and in the analysis and proposed mitigations in general. What happens if the unexpected occurs in the future due to mining below sea level? The guarantees and process offered by the applicant to the neighbors that appears in the Appendix are out of date and insufficient (see Ecology comment letter). There has been no offer of performance bond by the applicant? Have all the questions posed in the past regarding the groundwater analysis been completely addressed with the addition of one and only one data point (EB-33)?

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p.3.3-13. Questions have been raised by those testifying and submitting comments on the DEIS about the feasibility of the freshwater lens interpretation. Has this particular analysis been peer-reviewed by qualified personnel within or outside of DNR? A comment has been made about the accuracy of assuming 30 inches of precipitation per year for the Quarry site. Please double-check this figure and analyze whether a more accurate figure, if one is found, alters the freshwater lens analysis or interpretation.

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3.3.3 Impacts of the Alternatives

p.3.3-14 Limited Mining. How much less would the potential for marine water seepage into the Quarry be under the Limited Mining Alternative as compared to the Proposed Action? Is there a way to quantify the potential or risk? The County asked this question in earlier comment letters to

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DNR and the issue is not explicitly addressed in the DEIS.

3.3.4 Mitigation Measures

p.3.3-15 Groundwater. If circumstances occur which require the preparation of a supplemental hydrogeologic evaluation, what would happen next to assure groundwater protection? The County is of the position that any permit that allows either the Proposed Action or the Limited Mining Alternative be conditioned such that if groundwater degradation is observed and associated with operations at the Quarry, the permit would be revoked immediately and restitution undertaken by the responsible party. This particular mitigation point in the DEIS appears weak. No course of action is outlined beyond the completion of an evaluation.

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3.4 Plants and Animals: 3.4.1 Affected Environment

p.3.4-1 Plant Communities. There is no mention of the previous encroachment into the 200-foot wide buffer (which in the Reclamation Plan section was referred to as a setback). What is the schedule for implementing the buffer restoration plan completed in the year 2000?

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p.3.4-5 Dead and Downed Material. The DEIS refers to "... the relatively intact of the condition of the shoreline buffer." Is this a reference to where mining has encroached upon the 200-foot shoreline buffer or is there some other reason why the buffer is not completely intact?

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3.4.2 Impacts of the Proposed Action

p.3.4-16 Plants Communities. Does the 31.5 acres that compose the entire shoreline buffer (area within 200 feet of the shoreline), as defined in the DEIS, include the area that was mined within the 200-foot shoreline jurisdiction under the Shoreline Management Act? The assumption is that the 31.5 acres does not include the disturbed area, as the DEIS states that the 31.5 acres "... will remain undisturbed." However, it also implies that the entire 200-foot shoreline buffer is 31.5 acres. There may be a discrepancy in this section. At the bottom of this page a statement is made about future residential development on the site. Would this future clearing be within the 200-foot buffer (see previous comments on this topic)?

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Marine Habitat

p.3.4-19. In this section the shoreline buffer is described as 200 feet and the setback as 220 feet. The DEIS should be consistent on this point. The area within 200 feet from the shoreline is interchangeably called a buffer and a setback throughout the document. The description in this section may be the most accurate. The buffer is 200 feet; the mining setback is 220 feet.

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p.3.4-20 Water Quality: Mining. The DEIS states that, "The only possible area of concern is due to relatively high nitrate nitrogen levels being released into Mats Mats Bay." This statement prompts questions. Who is releasing these relatively high levels? How high is relatively high? What are the quantities? Is there evidence of an impact in the Bay? What happens if future data collection indicates that the impact is greater and water quality worsens? Will the applicant be collecting future Mats Mats Bay nitrate-nitrogen data, not just for the NPDES discharge points, but at various points in the Bay?

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3.4-21. Regarding air pollution by dust, has the interception factor by trees and other vegetation been considered in the model? (See previous comments.) Which mitigation measures are "practicable" and which are not? The more recent quantities of accumulated silts in Mats Mats Bay are not acceptable.

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3.4-22 Post-Mining. Why is the 200-foot setback (buffer?) now being "proposed"? Again, does this mean the 200-foot (or 220-foot) mining setback will remain during the reclamation phase (which seems obvious, since there is no need to reclaim what has not been mined), or is this setback being proposed as a permanent setback established by conservation easement or other instrument?

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Conclusions

Again, does the 31.5 acres include the area within 200 feet of the shoreline that has already been disturbed? If so, this should be re-phrased to clarify. If not, then the word "entire" should be removed.

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3.4.3 Impacts of the Alternatives

p.3.4-23 Limited Mining. According to the DEIS, the Limited Mining Alternative "... would result in only marginally less impact to aquatic habitat." Based on our previous comments on the lack of information regarding nitrate-nitrogen inputs, we question how the consultant arrived at this conclusion and how DNR made it theirs. The State Departments of Ecology and Fish and Wildlife raise issues regarding the potential impacts of the Alternatives to water quality in Mats Mats and associated effects on wildlife. Please provide more assurances, information, and/or discussion related to nitrate-nitrogen loading in the Bay, the potential impacts, and proposed mitigation measure to specifically and continually address this issue.

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3.4.4 Mitigation Measures

p.3.4-23 Plant and Animal Habitat. Here it states that the shoreline and upland buffer is 34 acres. How does this relate to the 31.5 acres previously cited? Does the 2.5-acre difference represent the amount of acreage within the 200-foot shoreline jurisdiction that has been disturbed by past mining activities?

p.3.4-24. Finally it appears that previous shoreline violations are mentioned. "Where past activity has cleared any of these buffers, the cleared area could be dressed with suitable topsoil and replanted with Douglas-fir as soon as possible in order to initiate regrowth of the forest cover in the buffer." With all due respect, the word "could" and the phrase "as soon as possible" should not be in this statement. A buffer restoration plan was developed and accepted in late 2000 in order to close out an enforcement action that began in 1999. The buffer restoration plan was supposed to be implemented by the applicant "as soon as possible" at that time. It is not a new idea for mitigation, as this section seems to suggest. If there is a distinction between the shoreline and upland buffers, please clarify this point.

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p.3.4-25 Marine Habitat. Please clarify the reference to "groundwater runoff."

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3.5 Environmental Health (Noise)

In general, would there be an increase in noise, as experienced off-site, under the Proposed Action?

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Table 3.5-1 Common Sound Levels and Sources and Subjective Human Responses. There is information missing in the last column of this Table.

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p.3.5-4 Current Mining Conditions: Barge-loading. Barge loading at night could only occur with prior approval by the UDC Administrator for each occurrence.

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p.3.5-7 Measurements of Existing Sound Levels. How does the author come to the conclusion that

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crows and aircraft "... tended to be responsible for the loudest noises"? Were the visits to the measurement locations during the recording periods or at other times?

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cont'd

3.5.2 Impacts of the Proposed Action

p.3.5-10 Mining and Processing. The DEIS states that the 42" Jaw and 36" Jaw crushers would not be operated simultaneously. Jefferson County would make this a condition of an operating permit, if and when granted.

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Again, barging on a 24-hour basis requires prior approval from the UDC Administrator.

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3.6 Risk of Explosion and Vibration: 3.6.1 Affected Environment

p.3.6-1 Blasting Procedures: Flyrock. The DEIS states that, "On rare occasions, flyrock from blasting on the Mats Mats Quarry site has traveled beyond the site boundaries." Are the answers to these questions known: How many times, reported by others or observed by operators, has flyrock from blasting traveled beyond the site boundaries? What is meant by rare (i.e., how many times per year does this occur and what percentage of blasts results in flyrock traveling beyond the site boundaries)?

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The proponent has not provided adequate mitigation proposals to offset the impacts of the weekly blasting. These mitigations should include repair of homes suffering damages from blasting (e.g., differential settlement, cracks, and property damage).

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3.7 Land and Shoreline Use - Land Use Patterns: 3.7.1 Affected Environment

p.3.7-1 Existing Land Use: Site Vicinity. Large lot rural residential land use is mentioned as a characteristic of the site vicinity, and later defined as a residential density of approximately one dwelling unit per five acres. There is no mention of the comparatively high number of legal, nonconforming lots (i.e., lots that are less than five acres within a Rural Residential 1:5 land use district). In other words, there are a number of lots in the immediate vicinity that are less than five acres in size.

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It is more accurate to say that mining at the subject location is a "yes" use (i.e., allowed subject to code provisions), not permitted outright (i.e., not requiring a permit).

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p.3.7-3 Land Use Designations: Shoreline Management Master Program. Shoreline regulatory jurisdiction extends into the adjacent water body until the limit of the county boundary, in this case halfway across the Admiralty Inlet where the Jefferson County boundary meets the Island County boundary. The shoreline environment designation waterward of the ordinary high water mark is termed "Aquatic."

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3.8 Land and Shoreline Use - Relationship to Plans and Policies

p.3.8-3 Jefferson County Unified Development Code: Mineral Resource Lands District. Under *Discussion*, the DEIS states that Mats Mats Quarry meets the MRL overlay district designation criteria. The criteria in the UDC were established for the designation on new MRL overlay districts. The County has not reviewed, nor intends to review, Mats Mats Quarry against these criteria, as the Quarry is an existing operation, which was designated as a Mineral Land of Long-Term Commercial Significance through the 1995 Jefferson County Mineral Lands Ordinance and 1998 Comprehensive Plan because of the existing DNR Surface Mining Permit. For regulatory purposes, the horizontal extent of Mats Mats Quarry, as defined in the DNR Surface Mining Permit, is considered to be an

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MRL overlay district. Assumptions should not be made that such a designation would be approved for a new facility in the same location. We do note a rephrasing of the MRL designation criterion found at UDC 3.6.3.c, which states, "The subject property is surrounded by parcels no smaller than five (5) acres in size on 100% of its perimeter." The DEIS paraphrases the criterion as, "adjacent properties are zoned for one dwelling unit per five acres," which changes the meaning considerably (see discussion above on site vicinity).

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cont'd

p.3.8-4 Standard 4.24(6). Note clause regarding authorization from UDC Administrator for emergency extension of operation hours. A statement in the *Discussion* section below contradicts this provision.

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p.3.8-5 Standard 4.24(7) *Discussion*. From the County perspective, the importation of reclamation soil via barge has never been a permitted or grandfathered use. Where is the proof for this? Was this part of an approved DNR Reclamation Plan? Why has the site not been reclaimed as it has been mined, which is the standard reclamation process approved by DNR?

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p.3.8-6 Development Standards: 6.7 Stormwater Management Standards. Jefferson County will require a Stormwater Management Permit in combination with other County permits for either the Proposed Action or Limited Mining Alternative, if and when one of those Alternatives or another alternative receives approval from agencies with jurisdiction. The Stormwater Management Permit would dovetail with the Ecology's stormwater approval.

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p.3.8-7 Development Standards: 6.13 Landscaping/Screening. Again, please clarify the size and condition of the shoreline buffer and setback area, including areas within the 200-foot shoreline jurisdiction upon which mining activities have encroached.

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Surface Mining Regulations (RCW Chapter 78.44)

The County has issued an SM-6 in association with the DNR Surface Mining Permit stating affirmatively that the future and subsequent land use of the site is rural residential and negatively that the operation is fully consistent with current zoning regulations. See the SM-6 Rider on file with the DNR Surface Mining Permit for Mats Mats Quarry. Those activities that are nonconforming and are considered "grandfathered" are subject to a gradual phase-out in the public interest. Uses that are discontinued for a period of two years, for example, are considered abandoned in terms of legal, nonconforming status. See UDC 2.8 Definitions, Abandon.

72

p.3.8-8. According to our records, we do not have a copy of the application for an updated reclamation plan. The County would be interested in obtaining a copy of that reclamation proposal in the interest of analyzing the entire proposal as Preferred Action.

73

p.3.8-8 Shoreline Management Act (RCW Chapter 90.58)

Technically, there are five primary shoreline environment designations under the Jefferson County Shoreline Management Master Program— Natural, Conservancy, Suburban, Urban, and Aquatic— followed by a number of dual-designations. The extent of the Aquatic designation is described in previous comments above.

74

3.9 Transportation

p.3.9-3. The Department of Community Development disagrees with the statement, "... because wider pavement encourages faster driving speeds, wider shoulders may not be desired." Our understanding is that the neighborhood roads in question do no meet or barely meet level of service

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standards for the type of trucking transport utilized in the operation of Mats Mats Quarry. Whereas it may be true that widening the shoulders should not be a requirement of the Preferred Action, from a local government standpoint, safety of pedestrians is extremely important. Pedestrian users of the neighborhood roads in question have cited safety concerns in relation to the size of the trucks that utilize those roads. Speed limits are posted; where is the analysis to support the assumption that wider shoulders will result in faster speeds and therefore more danger to pedestrians. Has the current danger level to pedestrians because of the shoulder width and the size of the commercial vehicles been analyzed?

76

3.9.3 Impacts of the Alternatives

p.3.9-9 No Action. The DEIS states that, "There should be no change in traffic safety with or without the proposed project." Does this consider the time extension of the Proposed Action or Limited Mining Alternatives? Does the applicant acknowledge that there is increased danger for pedestrians with large trucks traveling on undersized roads between Oak Bay Road and the Quarry site?

77

APPENDICES

Appendix I: Hydrogeologic Evaluation

p.2: 1.2 No-Action Alternative. "The quarry floor elevation would be mined to an elevation of 0 MLLW." There is no acknowledgement that the quarry floor has already been mined to -13 MLLW or thereabouts. Also lacking in the DEIS in general is an explanation of why that occurred from the perspectives of the operator and DNR, when the active Surface Mining Permit clearly outlined a vertical limit of sea level (+/- one foot). Our understanding is that there is some degree of controversy about the origin of that vertical limit, but that the limit is part of the Surface Mining Permit nonetheless. This apparent infraction on the part of the previous and current operators at Mats Mats Quarry begs the question: Who will monitor future activities to ensure that operations are confined to the vertical limit of the selected alternative?

78

p.4: 2.0 Affected Environment, 2.1 Site Conditions. The report states that "... active mining has extended down to approximate elevation minus 15 feet." While the elevations cited are approximate, the reader is still left wondering why different figures are cited in different sections (see above) and whether DNR or anyone knows the actual vertical extent of the mining operation at Mats Mats Quarry.

79

p.9: 2.4 Hydrogeology. If higher conductivity readings "... may be caused by the blasting," have potential impacts from blasting at -60 MLLW been analyzed?

80

Tidal Response. Please clarify the results in this passage. Tidal response monitoring was done at 10 of the 33 exploration borings or at 10 of the 33 explorations borings for which tidal monitoring was done, the indications were of no hydraulic connection? The three exceptions are part of the 10 or part of the 33?

81

p.10 Tidal Response. So the conclusion is that even though the rock is incompressible and stiff, seawater is able to seep through?

82

p. 11 Water Seepage and Ponding. "The most extensive ponding is present where the mine's base was below sea level." Since the mine's base at sections is from -13 to -15 MLLW, is it safe to say

83

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that the deeper the mine's base, the more the ponding? How did the consultant project the level of ponding at -60 MLLW? What equations or calculations were involved in making that prediction? Is it possible that at a certain point or under certain conditions, the seepage/ponding could actually be of a much greater volume?

p.13: 2.5 Geologic Hazards, Erosion Hazards. "Fine grained sediment was observed to have accumulated within the Mats Mats Bay Slip. Silt fencing has been placed around the perimeter of this area; although, the fencing was in disrepair in locations." Is the fencing still in disrepair? If so, why? When will it be repaired? Is the fencing an integral part of a sediment and erosion control plan or of the NPDES permit itself?

84

3.0 Potential Impacts from Mining and Reclamation Plans

p.15: 3.1 Hydrogeologic Impacts, Tidal Impacts. In this section are partial answers to the question above regarding estimated levels of marine water seepage at the proposed vertical mining limit. The consultant states that the expectation of an increase from 5 gpm to 25 gpm is conservative. Questions remain about the potential for unexpected effects based on unknown conditions at greater depths, the precipitation figure used in the analysis, and the anticipated impact from stormwater runoff in comparison to other statements in the DEIS that stormwater runoff will be collected and directed to NPDES discharge points.

85

4.0 Mitigation Measures for Mining and Reclamation Plans

p.20: 4.1 Hydrogeologic Mitigations. If "... there is little to no risk of seawater intrusion into the off-site wells as a result of mining and reclamation activities," the applicant should be prepared to guarantee no impacts through performance bonds and other measures. A supplemental hydrogeologic evaluation that may include monitoring of off-site wells is insufficient security for neighbors. Why not do this monitoring before a problem is observed?

86

p.21: 4.2 Geologic Hazards, Landslide Mitigations. "It may be necessary to pump water from low areas to facilitate the placement of fill soils." How would this pumping occur? To where would the water be pumped? Would this water be considered potentially contaminated? Is the proposal to pump it directly into Mats Mats Bay or Admiralty Inlet? Would this activity require a permit? Will DNR approve this activity through the Reclamation Plan and monitor for compliance with required conditions? Have the Federal Services analyzed this option for compliance with the Endangered Species Act?

87

p.22. "Geotechnical engineering studies will be required prior to construction on the site to confirm the stability of the fill to support structures." While this Department agrees in principal with this statement, we are curious as to the source, assuming that indeed it is a County decision to require such a study and analyze the results and effects on future development. The statement reads as if the applicant or perhaps DNR would be requiring the studies.

88

p.29 Table 2: Summary of Impacts and Mitigations. The potential pumping of seawater prior to placement of reclamation fill is not mentioned or a specific procedure described in the table.

89

Appendix B

p.B-1: 1996 Exploration Program, Geologic Reconnaissance. Was the objective of the off-site geologic reconnaissance in 1999 in part to answer questions that had been raised about the conclusions of the previous studies? Jefferson County and others raised questions about conclusions made regarding the hydrogeology of areas off-site and impacts to those areas from on-

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site activities based on extrapolation on on-site data. Have these questions been answered to the satisfaction of DNR geologists?

Appendix II: Plant and Wildlife Assessment

p.4: 3.1.2 Current Land Use. In discussing the 200-foot shoreline management zone, there is no mention of previous mining encroachment into that zone and how those unpermitted activities influenced the vegetative composition of those areas.

91

Appendix III: Marine Resources Report

1.0 Introduction

p.3: 1.2 Proposed Plan. If the 200-foot setback is only during the mine and reclamation phase, then it should not be referred to as permanent (see previous discussion on this point).

92

3.0 Impacts and Mitigation Measures

p.15. See previous discussion concerning inconsistent reference to shoreline setbacks and buffers.

93

3.1 Dredging of Barge Facilities. Does the proponent plan to apply for shoreline permits, Hydraulic Project Approval, and Army Corps approval for the proposed dredging every five to ten years?

94

3.4 Water Quality

Please refer to previous discussion regarding the apparent lack of data upon which to conclude that there would be no anticipated impacts due to nitrate-nitrogen loading in Mats Mats Bay. Also, it appears that interception of atmospheric by trees and other vegetation and the potential subsequent deposition into the Bay or waters entering the Bay was not considered. No explanation was offered for observed phenomena in Mats Mats Bay (see WDFW letter regarding basalt siltation).

95

p.20 Post-Mining. "Treated water would be released to Puget Sound on the east side of the peninsula rather than to Mats Mats Bay." Which treated water—stormwater runoff, marine water seepage pumped out of the mine prior to reclamation, or some other source?

96

p.21: 3.6 Limited Mining Alternative. Previously in the document it was reported that a lack of baseline water quality data in Mats Mats Bay combined with a lack on data on nitrate-nitrogen discharge from the Quarry into the Bay meant that it is unknown what impacts, if any, operation of the Quarry has on the Bay in regard to nitrate-nitrogen. In this paragraph, the effects are characterized as "low levels of water quality impacts (increased nitrate and fine sediments)..." How did the consultant reach that conclusion despite the lack of information? See previous discussion.

97

p.22: 3.8 Recommended Conservation and Mitigation Measures. Again, what dust suppression measures are considered impracticable compared to those that are considered practicable?

98

Appendix VI: Clean Soil Acceptance Policy

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We note that there is no submittal of monitoring reports or questionnaires completed by firms wishing to contribute soil for reclamation to agencies with jurisdiction and future responsibility for the character of the fill soil (i.e., Jefferson County when issuing future residential building permits). The Environmental Department of the applicant should make periodic reports, as appropriate, to the regulatory agencies to demonstrate the efficacy of the Clean Soil Acceptance Policy. Our understanding is that DNR is interested in using the Glacier Northwest Clean Soil Acceptance Policy as an industry model, which is encouraging. In order to ensure that the policy as written is being effectively implemented, however, a greater level of regulatory scrutiny is necessary beyond mere acceptance and endorsement of the policy as written.

99

Appendix VIII: NPDES Water Quality Plans

Stormwater Pollution Prevention Plan

p.4: C. Treatment Best Management Practices/Innovative Treatments. "Based upon sampling results collected to date, all collection and discharge points meet the pH limit..., the TSS limit..., and the turbidity limit... Treatment is therefore not required." The date of this five-page SWPP Plan is April 17, 1997. Does the quoted statement continue to be true based on data collected since the date of this document?

100

Stormwater and Process Water Monitoring Plan

p.1: A. Monitoring Points. Point 2 should probably read, "Discharge from the South Bank of Mats Mats Bay Slip." Please confirm.

101

Appendix IX: Groundwater Monitoring Program

p.1 Introduction. "This program shall be effective as of the date Jefferson County issues a determination of non-significance or mitigated determination of non-significance with regard to the applications and plans submitted to the County on October 22, 1997." This statement is clearly out of date. There may be other statements within this document that are also out of date. This Program is either not referenced in the main body of the DEIS or de-emphasized in the sense that there is little or no discussion about the guarantees and triggers outlined in this Program in relation to potential impacts on neighboring residential wells. Please include a more explicit reference to this or an updated version of a Groundwater Monitoring Program. As the comment letters from Ecology and others indicate, there may be more appropriate methods to guarantee future water quality for neighbors. An updated Program that is agreeable to all parties should be developed and in place before any authorizing permits are granted by any agencies with jurisdiction.

102

Part I: Monitoring Requirements

p.1: A. Monitoring Well Installation. Is EB-33 the first of the three wells cited in this section?

103

p.2: B. Groundwater Sampling. Sampling should be conducted at least until reclamation is complete (not until the operator ceases mining, as this section suggests) and potentially beyond for a reasonable number of years to evaluate residual or latent effects. In this section also appears the following statement: "Nitrate is an indicator of possible contamination from on-site blasting activities." When nitrate is mentioned in the body of the DEIS, this type of statement either is

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absent or the idea is not as clearly expressed. In other words, when relatively high nitrate levels are reported for the two test samples in the record, no explanation is given or explained.

104
cont'd

Part II: Corrective Action

p.2: A. Water Quantity, 2. Water Quantity Monitoring Committee. If a WQMC becomes part of the final Program, it may behoove the Committee to develop the water quality monitoring program prior to the revelation of a significant deviation from baseline levels in the groundwater sampling of on-site monitoring wells. What happens if the WQMC cannot reach consensus on any given issue?

105

p.4: B. Water Quality, 3. Determination of Responsibility. Who will be responsible for paying the third-party consultant(s)? It is unstated in this section, though the assumption is that the applicant/operator would pay all expenses. If this is so, it should be stated explicitly. Ecology has also commented on this Program.

106

p.5: 4. Corrective Action. Who would decide whether a "... homeowner unreasonably interferes with [Glacier Northwest's] efforts to provide an alternative water source..." The assumption is that Glacier Northwest would make that determination, based on the "sole discretion" provision above. What is the definition of "unreasonably interferes"? What is the objective of this clause? Are there other dispute resolution tools that can be utilized in these cases besides unilateral operator judgment, which could prompt court action in some cases?

107

Appendix XI: Vibration Analysis

3. Evaluation of Blasting Procedures: 3.2 Flyrock and Noise. "It is our understanding that the Department of Labor and Industries investigated this complaint and was unable to verify that the rock emanated from the Mats Mats quarry." What are the procedures by which L & I verifies the source of reported flyrock? Was their conclusion that the rock could have been placed there or found there rather than arrived through the air from the Quarry site via blasting? It does not seem that if indeed the rock was flyrock, it could have flown from anywhere else in the vicinity.

108

Mats Mats Quarry Blasting Procedures (March 3, 1999). Are these procedures in place and being followed or is this still in the draft phase, as indicated in the upper right-hand corner of the page?

109

Appendix XII: Air Quality Analysis

The report is dated November 20, 2000, but a note on the title page reads, "Updated August 3, 2001," and yet the footer in the report body lists December 1, 2000 as the date. Please clarify.

110

p.2. "OAPCA staff currently inspects the site at regular intervals..." What is the specific frequency of inspections? Are some of the inspections random or are all of the inspections scheduled? How many complaints have been received that prompted site inspections during the last five years of operation?

111

p.4: 3.1.2 Air Quality Modeling of Particulate Concentrations. Again, if the objective of the Air Quality Analysis in part was to respond to concerns raised by the public during scoping concerning deposition and its potential impacts in Mats Mats Bay, why exactly TSP modeling chosen as the only means to answer the concerns? Why was no physical experimentation performed that would present

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a body of physical evidence as opposed to a model? Has the question, "What is the source of basalt siltation in Mats Mats Bay?" been answered unequivocally by this Analysis and this model? See previous discussion and the comment letters from WDFW and OAPCA.

112
cont'd

p.5 Meteorological Information. "Ideally, on-site data are collected and used for a modeling analysis. However meteorological data are generally not available for sand and gravel projects, and no on-site data were available for the current project." Questions have been raised about the accuracy of the precipitation figure employed in the marine water seepage analysis. Have questions been raised about using general, regional data for this model? Why not collect on-site data, at least to be able to apply site-specific variability to the data for Whidbey Island, 25 miles to the north? Discussion on this issue appears on p.6 and is noted. However, the absence of on-site data, and the fact that modeling unsupported by physical data collection for area deposition was chosen as the only method to answer concerns, in combination potentially serve to cast uncertainty on the results. Please buttress the discussion in the FEIS in such a manner that agencies and the public are left with no doubt that the Quarry is not responsible for basalt siltation in the Bay. A presentation of alternative theories for this phenomenon would be helpful to meet this objective.

113

p.7 Other Information. "There are no measured air concentrations in the area from which to estimate a background concentrations. The values used here are reflective of remote areas of the west where there are no major sources of air pollution nearby." Please explain why the background concentrations selected are appropriate for this area. What would be causing these concentrations if there are no major sources of air pollution nearby? What would the results of the model indicate if actual background concentrations are significantly lower or higher than the figures selected for the analysis?

114

p.12: 3.1.3 Health and Environmental Effects of Elevated PM10 Concentrations. Please offer explanation for the lay reader for why smaller particles actually contribute more to visibility degradation than larger particles. How does this related to the visual test applied by OACPA during site visits? What is the difference between visibility degradation and being able to see a dust effect with the naked eye? Why case presents greater health and environmental effects?

115

4. Mitigation Measures

p.12. "The dust suppression measures are for the entire site but focus on the main emitters: vehicles traveling on unpaved surfaces." This statement and similar statements are made without revealing the analysis that produced the conclusion. How does the effect of blasting and other mining activities, such as barge and truck loading and off-loading, compare with vehicle traffic on unpaved roads?

116

p.13. It is stated that the Quarry "does and would continue to use these reasonable precautions to minimize fugitive dust." Precautions in this statement refer to RACT measures listed above. Does the Quarry currently employ all of these measures? One of the measures listed is "surfacing roadways and parking areas with asphalt, concrete, or gravel." Has the Quarry done this? Is vehicle travel on unpaved surfaces not cited as the "main emitter" of dust from the site?

117

Appendix XIII: Surface Water Quality Evaluation

p.1-1: 1.0 Introduction, 1.1 Purpose and Scope. "The purpose of this study was to evaluate and describe existing surface water quality of Mats Mats Bay..." Where in the study is this purpose met? On p.2-4, the reports reads, "Water quality data characterizing the existing condition of Mats Mats

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Bay itself is not available." Such data was not obtained and no explanation given. No complete evaluation or description of existing surface water quality of the Bay is offered, making the conclusion that the Quarry does not and will not affect water quality in the Bay potentially untenable, unless supported by additional study, evidence, and analysis.

118
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p.1-4. "Runoff from virtually the entire quarry would continue to be directed into the existing sediment ponds located on both the south and west portions of the study area." See previous discussion on this issue in the context of the freshwater lens theory regarding marine water seepage. Essentially, if virtually all stormwater is directed, from where will the freshwater come to combat marine water seepage in areas mined below sea level?

119

p.2-1: 2.0 Affected Environment, 2.1 Background. "The mining operations are regulated by mining permits issued by the DNR and the operations were grandfathered by Jefferson County regulations." It is more accurate to say that Jefferson County designated Mats Mats Quarry, per the horizontal and vertical limits of its existing DNR Surface Mining Permit, as a Mineral Resource Land through adoption of the Comprehensive Plan in 1998. Operations that involve health and safety cannot be "grandfathered." Expansion of existing mining operations is regulated under the Unified Development Code (UDC). Furthermore, Jefferson County would consider the areas mined deeper than minus one foot MLLW to be out of compliance with County and State regulations.

120

p.2-4: 2.3 Surface Water Quality, Admiralty Inlet and Mats Mats Bay. There is a reference to "Jefferson County EIS scoping." Should that reference read, "DNR EIS scoping"?

121

p.2-6 Stormwater Discharge from the South Mine Outfall to Mats Mats Bay. "Background nitrate-nitrogen concentrations in Mats Mats Bay... have not been reported by any of the studies previously discussed." Again, why not collect data and establish background concentrations? What are the obstacles to establishing background concentrations? Why was this endeavor not undertaken?

122

p.2-7: 2.4 Ground Water Quality. Seawater intrusion is cited without an explanation about why this phenomenon should not be considered a significant impact.

123

p.2-8: 2.5 Regulations Applicable to Water Quality Standards, 2.5.5 Stormwater Runoff NPDES Permit. The activity of pumping water from the mine pit to a vegetative area is mentioned in passing. What is the relationship, if any, between this practice and the proposition to pump future marine water seepage before reclamation?

124

p.3-1: 3.0 Impacts: Water Quality, 3.2 The Proposed Alternative Mining Phase Water Quality Impacts, 3.2.1 Turbidity and Sediments. "...Blasting would generate dust and fines..." Please explain this statement in comparison to previous statements in the DEIS that indicate the vehicle traffic on unpaved surfaces is the main emitter of airborne particulates. In fact, in the air quality analysis, blasting is mentioned, if at all, only in passing.

125

p.3-4: 3.2.3 Phosphorous and Nitrogen. How did the consultant reach the conclusion that "... eutrophication risk in Mats Mats Bay would not change" under the Proposed Action? What exactly is that risk in the first place? It seems that the risk itself has not been characterized for lack of data. Two measurements of nitrate-nitrogen concentrations from discharge samples at the Quarry over the last five years are cited without informing the reader if those readings are relatively high or not. Upon further inspection, the readings are indeed high. Earlier in the paragraph, the consultant states that, "During the period of stratification, Mats Mats Bay could be sensitive to nitrogen inputs." On p.3-5 under 3.2.6 Conclusion, the consultant states that, "Nitrate-nitrogen in the discharge to Mats Mats Bay would not change as a result of the Proposed Plan, so summer algal growth would be expected to continue as it has in the past." If there is no background data or

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evaluation for water quality in the Bay, how is the reader to know whether summer algal growth in good, bad, or neutral in terms of water quality? The only two data samples from the Quarry indicate high levels of nitrate-nitrogen. If the same levels are expected over a longer period of time, how is that not an increased impact? More analysis and/or explanation is needed to allay concerns.

126
cont'd

PEER REVIEW

Finally, it is our understanding that DNR did not contract an independent party for peer review, but rather relied on the expertise within the agency. The County suggests that the staff members of DNR with expertise in geology and hydrogeology who reviewed the consultant's work and accepted the consultant's conclusions be listed. It would be valuable to the County and potentially to other agencies and individuals interested in this process to know who from DNR reviewed the consultant's work and what expertise those individuals possess. Alternatively, it may behoove DNR to solicit an independent review at the applicant's expense, which is a method provided by the SEPA statute and rules.

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Thank you for your attention. If you have any questions or concerns, please contact Josh Peters, Associate Planner, at (360) 379-4466 or <jpeters@co.jefferson.wa.us>. He is the staff contact for the Mats Mats Quarry mining expansion proposal.

Sincerely,

Al Scalf
Director of Community Development

AS: jdp

- c: File
David Goldsmith (County Administrator)
David Alvarez (Chief Civil Deputy Prosecuting Attorney)
Charlie Cortelyou (DNR Olympic Region Manager)
Patricia S. Henson (DNR Commissioner's Office: Government & Constituent Relations)
Dean McDonald (Mats Mats Quarry Plant Superintendent)
Ronald E. Summers (Lone Star Northwest)
Richard Schipanski (Huckell/Weiman Associates, Inc.)
Stephen H. Roos (Hillis, Clark, Martin & Peterson)
Rebecca Inmann (State Department of Ecology SEPA Unit)
Rae Belkin (Mats Mats Area Coalition)

Response to Letter 4

JEFFERSON COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT

1. As described in the *Groundwater* section and *Appendix I* of this Final EIS, layers of basalt form an effective hydrologic barrier between the quarry and off-site domestic supply wells. With the implementation of recommended mitigation measures to maintain this barrier, it is unlikely that quarry activities could affect off-site domestic wells. As an added precaution, the groundwater monitoring plan described in *Appendix IX* of this Final EIS would be implemented to verify the effectiveness of mitigation measures, and detect changes in ground water conditions near the quarry limits. Data from groundwater monitoring would be reported to the Washington Department of Natural Resources (DNR) and Jefferson County, and would be used to identify any problems and take corrective action before off-site domestic wells are affected.

The Groundwater Monitoring Plan has been revised to assign oversight of Monitoring Plan implementation to the Washington State Department of Natural Resources (DNR) and Jefferson County. The final scope of the Plan would be approved by the DNR and Jefferson County during the permit review process. A qualified consultant selected by Glacier, and approved by DNR and Jefferson County, would conduct the monitoring and prepare the reports. At Glacier's expense, a qualified consultant jointly selected by DNR and Jefferson County, and approved by Glacier, would review the reports. If contingency planning becomes necessary, that consultant would also, at Glacier's expense, assist these agencies in working with Glacier to develop contingency response actions.

If the permitting agencies and Glacier Northwest cannot reach a consensus, then the permitting agencies would determine the response. DNR and/or Jefferson County would have the authority, as a condition of permits issued to Glacier, to require Glacier to undertake reasonable response actions deemed necessary by the permitting agencies. A contingency response action would be implemented as determined by the contingency planning process.

A contingency plan would be prepared to remedy the "problem" identified during the problem recognition process. The contingency plan describes actions that Glacier would take to resolve the problem, the schedule for taking response actions, and the collection and interpretation of monitoring data used to determine whether the contingency response has resolved the problem. As an example, contingency response actions may include but are not limited to:

- Stopping mining in a portion of the quarry.
- Pressure grouting all exposed rock fissures within an area of concern.
- Monitoring fissures for groundwater seeps into the mine.
- Increasing the frequency of groundwater reporting in the monitoring wells.
- Revising the mining and/or reclamation activities at the quarry.
- Constructing an on-site ground water recharge system to maintain an effective hydraulic barrier between Glacier Northwest's property and the off-site supply wells.
- Providing an alternative water supply source.

- Using a decision matrix approved by the regulatory agencies to determine whether the objectives of the contingency response are achieved.

Because a contingency plan does not identify specific actions to be taken by a party in the same way as a reclamation plan, the monetary commitment of a bond cannot be tied to actions in a contingency plan in the same way that it can be tied to the required actions in a reclamation plan. The key difference is that while the actions identified in a reclamation plan *must* be taken, the potential actions identified in a contingency plan will only be taken if unforeseen and unanticipated impacts occur. Because a bonding company cannot make financial commitments about unspecified and likely unnecessary actions, they are unlikely to provide bonds for a contingency plan. Glacier Northwest would maintain general liability insurance coverage in an amount sufficient to cover potential contingency actions.

In addition, A Neighborhood Water Supply Policy, supplementing the Groundwater Monitoring Program (Program), would be implemented to provide water as quickly as possible to participating neighbors to the south of the quarry should the neighbors suspect that quarry operations have affected their wells. Because the contingency and response process of the Program could take time, the Neighborhood Water Supply Policy would ensure that residents have water during the contingency planning and response process. A copy of the proposed Neighborhood Water Supply Policy is presented in *Appendix XIV* to this Final EIS.

2. Airborne dust is one source of sediment to Mats Mats Bay that, in combination with sediment loads from other sources comprises the total sediment accruing at the bottom of the Bay. Mr. Holmerg's letter dated September 17, 1998 provided results from laboratory testing of samples Mr. Holmerg collected from basalt rock, beach sand, and sediment coating from his beach. The EIS provides results of an analysis of deposition of dust originating from the quarry (MFG 2000). If the mine were to operate for 100 years continuously, atmospheric dust deposition would total 2.0 millimeters (less than 5/100ths of an inch) assuming a sediment density of 1.5 tons per cubic yard. Under the *Proposed Action*, the mine would operate approximately 16 years. Thus, atmospheric deposition from mining activity would not be expected to make a measurable difference to Mats Mats Bay. The atmospheric deposition analysis is repeated in Appendix XIII to the Final EIS. The mine could also contribute sediment via discharge to the Bay from stormwater and dewatering water originating at the quarry. Additional field measurements of turbidity were collected at the quarry since Draft EIS publication (see Appendix XIII to the Final EIS). However, both the rate and quality of that discharge under the current stormwater management system is not reasonably expected to result in a measurable rate of sediment accretion in Mats Mats Bay.

While fugitive dust could be deposited in waters that are carried into Mats Mats Bay via tidal action, a larger amount of water (tidal water plus streams and other runoff emptying into the Bay) would exist the Bay. The exiting water would be expected to carry a portion of the deposited fugitive dust out of the Bay.

3. In response to public comment on the Draft EIS, additional water quality samples were collected. See of Appendix XIII of this Final EIS. Ammonia-nitrogen, nitrate+nitrite-nitrogen, and total Kjeldahl nitrogen (TKN) samples, along with *in situ* measurements of temperature, turbidity, conductivity, pH and dissolved oxygen were collected on May 24th 2002 and June 5th 2002 (A.C. Kindig & Co.) from five locations: (1) Stormwater

discharge from the south mine outfall (S-1 discharge), (2) Mine dewatering discharge from the north mine outfall (M-1 discharge), (3) The eastern shore of Mats Mats Bay (Station 1), (4) the Port of Port Townsend Mats Mats Boat Launch on Mats Mats Bay (Station 2), and (5) Mats Mats Creek just above the culvert upstream of Oak Bay Road. The additional water quality analysis prepared for the Final EIS indicated that quarry discharge is a minor contributor to nitrate to the bay relative to Mats Mats Creek and groundwater.

4. Please refer to Response to Letter 1 (Department of Ecology), comments 2 and 3 for a discussion on historic barge activity at the site. The shoreline buffer restoration plan was approved by Jefferson County in February 2001 and is currently being implemented.
5. The site would be reclaimed to accommodate residential uses consistent with site zoning. To accomplish reclamation consistent with the ultimate residential use, reclamation soil would be tested to assure clean soils. Soil testing would include the NWTPD-Dx which tests for total petroleum hydrocarbons and diesel, and Total Metals (RCRA 8) which tests for Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver (please refer to *Appendix VI* of this Final EIS for detail). Through the permit review process, a process for provision of soil testing results to the DNR and/or Jefferson County can be established.

To assure that capillary suction in reclamation soils do not limit the ability of the soils to accommodate septic systems for future residential use, a capillary break would be constructed (refer to section 3.4.3 of this Final EIS for detail).

6. Comment acknowledged. The comments and suggested mitigation measures contained in comment letters prepared by the Mats Mats Coalition, Jefferson County and State agencies have been reviewed and would be considered during project review. This Final EIS contains mitigation measures similar to the measures outlined in the attachment to this letter, including: conducting noise measurements when equipment is relocated to assure consistency with Jefferson County Noise standards; provision of a 300 foot mining setback to the south; monitoring the quality of stormwater released from the site; provision of numerous features to minimize fugitive dust; and, provision for the removal of existing concrete stockpiles prior to completion of reclamation.
7. Please refer to Response to Letter 1 (Department of Ecology), comments 2 and 3 for a discussion on historic barge activity at the site. Barge unloading of clean soil for reclamation has historically occurred at the site. Barge unloading of clean soils for use in reclamation occurred under site ownership by General Construction and Glacier Northwest. For example, since 1995 a total of 64 barge deliveries of soil for reclamation were made to the site. The largest number of reclamation barge deliveries was made during 1995, with 24 deliveries to the site. Approximately 12 acres on the extreme southern end of the site has been reclaimed. Reclamation concurrent with quarry excavation is not required under the existing surface mine permit.
8. The shoreline buffer restoration plan was approved by Jefferson County in February 2001 and is currently being implemented. The pre-construction monitoring visit by Jefferson County took place in early 2002 and the shoreline restoration work is in progress.

9. Comment acknowledged. The cited revision to the EIS related to the title of the Jefferson County Unified Development Code was made. Please refer to Chapter 2 (*Description of Operations*) of this Final EIS.
10. The cited figure reference on page 2-5 of the Draft EIS should have indicated Figure 2-2. The reference in the Final EIS has been changed to indicate Figure 2-2.
11. Comment acknowledged. Mining activity on the site is anticipated to continue until approximately 2023 and reclamation is anticipated to continue until approximately 2025. The Final EIS has been reviewed for consistency in referencing these dates.
12. Historically, the vertical limit of mining has been inconsistently referenced to MSL and MLLW, resulting in inconsistent mining elevations. The depth of mining under the *Proposed Action* would be controlled and monitored by Glacier Northwest and the State DNR utilizing existing benchmarks on the site with elevation reference in MSL.
13. Comment acknowledged. The following statement has been added to this Final EIS: “As under current conditions, barging could occasionally be conducted on a 24-hour basis, depending on market and tidal conditions. (Jefferson County has indicated that quarry operators must continue to obtain prior approval from the UDC Administrator for each and every instance of operations, including barge loading and unloading, outside of normal operation hours, regardless of frequency.)” Please refer to Chapter 2 of this Final EIS.
14. Please refer to response to comment 7 of this letter and Response to Letter 1 (Department of Ecology), comments 2 and 3 for a discussion on historic reclamation activities on the site. Completed reclamation activities on the site were initiated by the previous site owner. Since Glacier Northwest ownership in 1995, a total of 64 barge deliveries of soil for reclamation were made to the site. The largest number of reclamation barge deliveries was made during 1995, with 24 deliveries to the site. All soil imported to the site for reclamation was accepted consistent with the Clean Soil Acceptance Policy (see Appendix VI)
15. A copy of the Shannon & Wilson, Inc. peer review letter is provided in Appendix XIV. The peer review letter indicated that the technical report prepared by AESI in 1998 adequately identified existing conditions, impacts and mitigation measures. Please note that a substantial amount of additional analysis has been prepared for this EIS subsequent to the 1998 report.
16. The scale of the 1991 Yount and Gower map is 1:100,000, and is part of a published U.S.G.S. report (Reference: Yount, J.C. and Gower, H.D., 1991, Bedrock Geologic Map of the Seattle 30' by 60' Quadrangle, Washington: U.S.G.S. Open-File Report 91-147). Assigning a “probability” that the study missed a “significant fault or fold” in the immediate vicinity of the site would be based on conjecture regarding the methods employed by the U.S.G.S.
17. Adequate geologic data was obtained and reviewed, and the conclusions presented in the Hydrogeologic Report in the Draft EIS regarding water quality and quantity would not change based on any additional information from the “unmapped individual flows beneath the covered areas of the mine”. As clarified in the *Groundwater* section and technical report (*Appendix I*) of this Final EIS, the orientation (east-west) and physical

characteristics (extremely low hydraulic conductivity) of the multiple flow tops relative to potential groundwater impacts are the primary controlling factors concerning groundwater flow through the basalt aquitard. The cited statement in the Draft EIS was referring primarily to the limited surface exposures of bedrock in the central portion of the mine. Although unmapped flows beneath covered areas in the central portion of the mine are likely present between mapped flow tops 15 and 18 as shown on Figure 11 in the revised technical report (Final EIS *Appendix I*), the presence of additional flow tops would not change the results of the impact analysis.

The bedrock geology observed in the southern portion of the quarry, and specifically within the 300-ft mining setback, are of more importance for evaluating potential groundwater impacts. Flow tops FT-19 to FT 24 form a competent hydraulic boundary to north-south groundwater flow and prevent the potential for groundwater quality/quantity impacts to off-site domestic wells south of the quarry property. These flow tops are exposed at the surface in the southern portion of the mine. As described in the *Groundwater* section of this Final EIS, no groundwater discharge was observed in any faults or fractures exposed in this area of the mine. Any unmapped faults or fractures encountered during mining in the south mine wall that yield significant groundwater flow would be pressure grouted as described in the revised technical report (Final EIS *Appendix I*).

18. Marine seepage into the mine areas located below sea level is a potential impact only to mine operations. As discussed in the *Groundwater* section of this Final EIS, the anticipated low volumes of marine seepage would mix with the multiple sources of fresh water, resulting in a layer of brackish water at the base of the mine area. The impacts to mine operations would primarily be limited to dewatering concerns, and mitigation measures for these impacts are described in the *Groundwater* section of this Final EIS. Seepage would only occur in open portions of the mine, and the freshwater accumulating in the reclamation backfill would counteract any ongoing marine seepage into the former quarry area. Eventually the reclaimed site would attain a new hydraulic equilibrium, with the freshwater/saltwater interface (or mixing zone) likely decreasing in elevation beneath the site.

Through the permitting process, any future residential development on the site would be required to demonstrate an adequate domestic water source. Domestic water sources for future residential use on the site could include individual production water wells, community well system(s), or extension of a public water system.

The DNR does not have different estimates of marine water seepage amounts.

19. Seismic conditions present a greater risk of highwall instability than non-seismic (static) conditions. However, because seismic forces on the highwall would be of short duration, sustained loading would not develop, and a lower short term factor of safety is acceptable. This assumes that the static factor of safety is sufficiently high such that an additional seismic loading would not initiate failure. Requiring seismic factors of safety in the range of 1.5 would in most cases not be practical, because the required soil strengths would be unrealistically high. As a result, the slope would fail modeling, but would not fail during actual seismic conditions. Significant highwall stability impacts during seismic conditions would not be anticipated.

20. The Olympic Air Pollution Control Agency (OAPCA), the governmental agency with jurisdiction over the air quality in the project area, is charged with monitoring and evaluating the air quality in their jurisdiction. Generally, air quality regulatory agencies establish air pollutant monitors in only two types of areas: those with the potential for high levels of air pollution and very remote areas. The “high risk” areas allow OAPCA to evaluate the air quality in a worst-case scenario situation while the remote monitors allow them to establish “background” concentrations that are only slightly influenced by anthropogenic sources. OAPCA does not have any air quality monitors in the Mats Mats Bay area, and the Mats Mats Bay area is not considered a “high risk”.

OAPCA maintains a relatively extensive ambient air quality monitoring network. However, OAPCA and other air pollution control agencies rarely collect dust deposition data.

Ambient air quality or depositional rate data were not collected in the project area because, as stated above, the EPA and other regulatory agencies generally consider facility air quality impact analyses based upon guideline models sufficient to identify potential air quality impacts.

Dust deposition data was not collected for two reasons. First, the regulatory community considers the modeling analysis prepared for the Draft EIS an appropriate method for demonstrating the facility’s deposition rate. Additionally, while there are established and relatively easy methods for collecting ambient air quality data, there are not any established methodologies for collecting accurate and representative deposition rate data.

Another advantage that a dispersion modeling analysis has over a physical deposition study is that a dispersion modeling analysis accounts for only the material released from the Quarry. It would be difficult to determine the source of the material captured during a deposition study. As such, the deposition study would not provide definite answers concerning the source of the Mats Mats Bay siltation. Please refer to response to comment 2 of this letter.

21. Comment acknowledged. Please refer to response to comment 2 of this letter.
22. Please refer to the response to comment 20 of this letter regarding the reasons why no ambient air quality monitoring was conducted.

The influence of the trees and other vegetation surrounding the facility were not explicitly taken into account in the dispersion modeling analysis. Regardless of whether some of the particulate is entrained in the trees or not, the amount of fugitive dust leaving the site on an annual basis would not change. The only influence that the local vegetation could have on the fugitive dust emitted from the facility would be to change the short-term dispersion pattern and to a lesser extent, the long-term dispersion pattern. If the trees retain a quantity of the dust until the next strong wind, the short-term concentrations of fugitive dust in the ambient air could decrease. The next wind storm would dislodge the fugitive dust entrained in the trees and the associated short-term concentrations of fugitive dust could be slightly elevated. This potential phenomenon is not expected to produce ambient air concentrations that would exceed the ambient standards.

On an annual basis, the amount of fugitive dust emitted from the facility would either remain the same or potentially decrease when considering vegetation. The quantity of dust leaving the site could decrease if leaves that had entrained some fugitive dust fell to the ground. Due to the long averaging period, negligible annual average concentration and deposition rate, existing conservatism embodied in the dispersion model, and the small potential for large amounts of dust becoming entrained in the local vegetation, it is highly unlikely that dust entrained in the local vegetation would significantly change either the short or long-term ambient air concentrations or the dust deposition rate attributable to the Quarry.

23. Please refer to the Response to Letter 3, comment 3 (OAPCA) for clarification concerning the fugitive dust control measures currently employed at the Quarry.

The modeling analysis described in the Draft EIS indicates that fugitive dust emissions attributable to the Quarry are negligible and have, and would continue to have, an insignificant impact on the Bay and surrounding area. Please also refer to response to comment 2 of this letter for discussion on air borne particulate impacts to Mats Mats Bay.

24. Please see the response to comment 3 of this letter and the *Surface Water* section of this Final EIS. Under all alternatives evaluated in the EIS, including the No Action Alternative, stormwater and dewatering water management and quality at discharge would remain as under existing conditions. The Final EIS analysis used additional information gathered in the field subsequent to Draft EIS publication that indicates quarry discharge is a minor contributor of nitrogen to the Bay, relative to Mats Mats Creek and groundwater sources, which means that even if it were to be removed, sufficient nitrogen loading from other (natural and other land use impact) sources would remain to support algal growth under the supporting conditions of stratification and light. Mine discharge to the Bay slows and then ceases as the warm season progresses, limiting and then eliminating the quarry's influence on water column chemistry and Mats Mats Bay conditions. The water quality analysis in the Draft EIS and in the Final EIS, coupled with the fact that the *Proposed Action* and alternatives represents no change in annual nitrogen loading relative to the existing condition, is the basis for concluding no adverse water quality impacts would result from the *Proposed Action* relative to the *No Action Alternative*. The cited Mats Mats Bay water quality data and a copy of the HLA/Harper Owes report dated 1989 were requested from the County on May 13, 2002 and July 18, 2002, respectively. These reports were not available for insertion into the Final EIS.
25. Please see the response to comments 3, 24 and 34 of this letter, and Appendix XIII to the Final EIS, which provide the results of additional water quality monitoring and analysis prepared subsequent to issuance of the Draft EIS. The alternatives analyzed in the EIS would not change the quality or quantity of discharge to Mats Mats Bay during mining operations, only the duration that discharge would occur through the wetter seasons. Because there is no difference in stormwater treatment between the *No Action* and two action alternatives, eutrophication risk in Mats Mats Bay would not increase from existing conditions. The *No Action Alternative* represents what would occur under current practices under current permits. Since the stormwater management system at the quarry was updated in 1996, the quarry has been discharging water as it would under all alternatives described in the EIS; thus there would be no change to water quality from the existing condition.

The quarry has been discharging to the Bay for the past 68 years. If the exchange of water in the Bay with Admiralty Inlet were to result in an impact by allowing nitrogen to accumulate in the Bay from the quarry and other surface and groundwater sources, the degree of that effect is what is presently observed. The predominant nitrogen source is Mats Mats Creek and groundwater, which are much greater sources of nitrogen than the quarry. Nitrogen loading from roadway and other land uses that drain to Mats Mats Bay have undoubtedly been increasing in pace with development, while loading from the Quarry has been reduced due to water treatment improvements instituted by Glacier Northwest, Inc. after purchase of the quarry in 1995. Additional evaluation of quarry contributions to nitrogen to Mats Mats Bay has been prepared for the Final EIS; please see the *Surface Water* section and Appendix XIII of this Final EIS for detail.

26. Please refer to response to comment 3 of this letter.
27. Comment acknowledged. The comments contained in the comment letters prepared by the State Department of Ecology and Ms. Colette Kostelec have been considered, and where deemed appropriate, incorporated into the Final EIS. Please refer to Response to Letters 1 and 26 for detail.
28. Several of the untested borings were affected by the sub-drill zone, an inadequate surface seal, and/or did not contain enough water at the time of testing. However, in our opinion, the distribution of completed aquifer slug tests (Figure 8 of *Appendix I*) provided an adequate spatial coverage of the explored areas.
29. Tidal response monitoring was completed in a total of 10 observation wells. Tidal monitoring was completed in nine on-site observation wells (EB-2, EB-7, EB-12, EB-14, EB-20, EB-23, EB-25, EB-28 and EB-32) and the off-site observation well (EB-33 – drilled in August 2000). A tidal response was observed in three of the ten observation wells in which tidal monitoring was conducted (EB-12, EB-23 and EB-33). The tidal influences observed in the observation wells appear to be an expression of either hydraulic pressure transmitted through the basalt, and/or a more direct hydraulic connection between seawater and groundwater via more permeable flow tops or fractures. These results are discussed in the *Groundwater* section and in *Appendix I* of this Final EIS.
30. The rate of marine seepage was compared to runoff from a rainfall event at the quarry to illustrate that the estimated magnitude of marine seepage is very small compared to the amount of stormwater runoff from a typical rainfall event at the site. Please refer to the *Groundwater* section of this Final EIS and to response to comment 119 for a discussion on the relationship between the stormwater management plan and effects from marine seepage.
31. A detailed discussion on seawater intrusion in the Mats Mats vicinity is presented in the *Groundwater* section and *Appendix I* of this Final EIS. As discussed in this EIS, there are no identified impacts to the freshwater/saltwater interface except for some possible temporary fluctuations beneath the quarry resulting from the limited marine seepage. It is not anticipated that the *Proposed Action* or the Alternatives would cause an increase seawater intrusion in the vicinity of the quarry. Any changes to the freshwater/saltwater interface or mixing zone beneath the quarry would be temporary and eventually offset by the freshwater accumulating in the reclamation backfill as discussed in the *Groundwater* section and *Appendix I* of this Final EIS.

32. The dust and fines generated from blasting were included in both aspects of the dispersion modeling analysis: the ambient air concentration predictions and the dust deposition rate analysis performed for this EIS. The PM10 and fugitive dust emissions from blasting were incorporated in the modeling analysis in the same manner as emissions from all of the other sources at the facility.
33. Prior to July 1995, stormwater had been discharged into a silt-screened area within the Mats Mats Bay Slip. The back portion of the slip was intended to act as a sediment trap, however it did not function well due to tidal action within the slip. Sediment introduction to the Bay from the slip can be observed from aerial photographs taken in 1995 (Nies Mapping Group, Inc. 1995), prior to Glacier Northwest's purchase. After Glacier Northwest Inc. (Glacier; then Lonestar Northwest, Inc.) purchased the mine in July of 1995, it built on-site ponds and discontinued the use of the Mats Mats Bay Slip as a sediment pond. However, the silt-screened barrier in the Mats Mats Bay Slip still remains to help hold sediment that was deposited in the slip prior to Glacier Northwest's acquisition in 1995. A marine habitat assessment was conducted September 29, 1998 that characterized the bottom of Mats Mats Bay as silt dominated (AESI 2000b), thus introduction of minor amounts of silt would not be expected to degrade habitat. Since Glacier Northwest finished constructing on-site ponds and improvements eliminated the use of Mats Mats Slip as a sedimentation pond, turbidity and TSS in discharge to the slip have been within the NPDES Sand and Gravel General Permit criteria, with two exceptions for turbidity (please see the response to comment 100 of this letter for more detail on these exceptions).
34. Please see the responses to comments 3, 24, and 25 of this letter, and see Section 2.4 of Appendix XIII to the Final EIS, where additional data collection and analysis performed subsequent to issuance of the Draft EIS are described. In response to public comments to the Draft EIS, additional nitrogen sampling of quarry discharge, Mats Mats Bay, and Mats Mats Creek were conducted. Jefferson County also supplied data collected from a shallow well on the east side of Mats Mats Bay. There are no prior studies that have completely evaluated Mats Mats Bay with regard to all of the combined water chemistry and embayment factors that go into determining if and when nitrogen is limiting to algal growth. However, the data gathered do put the quarry discharge into the context of other nitrogen sources to the bay and indicate that, at the time sampled in the spring, quarry discharge was a minor contributor of nitrogen to Mats Mats Bay relative to contributions from Mats Mats Creek and the likely cumulative contribution from groundwater. At that time, nitrogen was not limiting to algal growth. As the warm season progresses, quarry discharge rates slow and then cease altogether during the warmest portion of the year when the greatest eutrophic sensitivity to nitrogen is likely to occur (stratified water, abundant sunlight, and low available nutrients due to algal uptake). Nitrogen was very high in the well Jefferson County reported (see Appendix XIII to this Final EIS). With regard to a "standard" for evaluating nitrogen impacts, Appendix XIII to the Final EIS references a nitrate plus nitrite concentration below which nitrogen may be assumed to be limiting to algal growth (in the absence of other data). At the time sampled, Mats Mats Bay had nitrate plus nitrite concentrations two to 8 times this threshold, meaning nitrogen was not likely limiting to algal growth; however nitrogen could be limiting during other times of year that were not sampled. As described above, under the conditions most likely to be sensitive to nitrogen additions, discharge from the mine slows and then ceases for the remainder of the summer, while groundwater and

other nitrogen sources unrelated to the mine are reasonably expected to continue contributing nitrogen to Mats Mats Bay.

35. The NPDES Sand and Gravel General Permit issued by the Department of Ecology, and under which the quarry discharges to Mats Mats Bay, requires that stormwater discharges be monitored weekly for temperature from July through September. This monitoring would continue under the *Proposed Action*. When the Washington Department of Ecology (Ecology) performed its last 5-year review of the NPDES Sand and Gravel General Permit, it looked at nitrate-nitrogen as a possible parameter of concern for quarry operations that employ blasting because of the potential for nitrate contamination from explosives residue (Ecology 1999). After evaluating data from quarry operations, Ecology concluded that nitrate-nitrogen concentrations from quarries were not rising to levels that could cause adverse impacts, and thus eliminated nitrate-nitrogen as a parameter for monitoring for the NPDES General Permit (Ecology 1999). This Final EIS identifies quarterly monitoring of nitrate-nitrogen from stormwater leaving the site as a mitigation measure.
36. A current Stormwater Pollution Prevention Plan (SWPPP) for the site is required by the NPDES Sand and Gravel General Permit, and the quarry currently operates under a SWPPP. The SWPPP includes an accidental spill response plan that uses best management practices (BMPs) from 2001 Ecology Stormwater Management Manual adopted by Jefferson County. The accidental spill response plan provides for spill response measures and for emergency cleanup and disposal of any resulting contamination, as well as notification procedures to emergency services and state and local agencies. The plan must be updated annually or more frequently if warranted, as a requirement of the NPDES Sand and Gravel General Permit. There are no differences in the SWPPP and spill response plan between the *Proposed Action*, *Limited Mining Alternative*, and the *No Action Alternative* (existing condition).
37. The existing NPDES General Permit for the quarry is for discharge to Mats Mats Bay at the current location, which would continue with no alteration under any of the alternatives evaluated in the EIS. The existing stormwater and dewatering conveyance and treatment system is designed to discharge at this location as well. The *Proposed Action* proposes no alteration to this system or to the quality of discharge to Mats Mats Bay. Although Admiralty Inlet has better flushing than Mats Mats Bay, the EIS does not indicate that the existing system is causing adverse impacts. After reclamation under any of the Alternatives (including the *No Action Alternative*), stormwater would be routed to Admiralty Inlet after treatment.
38. As indicated on Figure 2-2 of the Draft EIS, the existing mining plan for the site contains a 200-foot permanent setback from the MLLW (please note that an additional 20-foot mining setback from the shoreline setback would be provided). The permanent setback is established through the Surface Mining Reclamation Permit issued by the DNR and would be in effect through the life of the permit.

The shoreline buffer restoration plan was approved by Jefferson County in February 2001 and is currently being implemented. The pre-construction monitoring visit by Jefferson County took place in early 2002 and the shoreline restoration work is in progress.

39. A lower factor of safety for seismic conditions than for static conditions is considered acceptable and the potential for significant impacts related to highwall stability during seismic events is not anticipated. Please refer to the response for comment 19 of this letter.

Please also refer to response to comment 30 of this letter for a discussion on the comparison between surface water runoff and marine water seepage.

40. Comment acknowledged. The term “significant” is defined under the State Environmental Policy Act (SEPA) Rules as “a reasonable likelihood of more than a moderate adverse impact on environmental quality” (WAC 197-11-794). An EIS is intended to disclose probable significant adverse impacts. Statements in the Draft EIS stating that “significant impacts are not anticipated” or “not expected” indicate that they are not probable and there is not a reasonable likelihood of more than a moderate adverse impact. As indicated in the *Groundwater* section of this Final EIS, significant impacts to area wells are not anticipated.

Based on comments received on the Draft EIS, the Groundwater Monitoring Plan has been revised and updated. Please refer to the *Groundwater* section and *Appendix IX* of this Final EIS for detail on the Groundwater Monitoring Plan

41. The *Groundwater* section and *Appendix I* of this Final EIS presents an “expanded” analysis and description of the hydrogeologic framework at and in the vicinity of the Mats Mats quarry site. Potential mitigation measures that could be implemented are included in *Appendix I*. One of the mitigation measures is the implementation of a comprehensive groundwater monitoring program to detect any changes to current ground water conditions, specifically south of the quarry, that could lead to impacts to off-site domestic wells. The revised groundwater monitoring plan is included as *Appendix IX* of this FEIS.

Subsurface geologic and groundwater conditions encountered during drilling and subsequent groundwater monitoring in off-site observation well EB-33 are similar to the geologic and hydrogeologic conditions documented at the quarry site. As described in the *Groundwater* section and *Appendix I* of the Final EIS, the multiple east-west trending basalt flows create an effective hydraulic barrier to north-south groundwater flow. Groundwater level data for the on-site monitoring wells and off-site well (EB-33) illustrate the barrier to north-south groundwater flow as the groundwater elevation in observation well EB-33 is significantly higher (approximately 30 feet) than the lowest portion of the existing quarry floor (refer to Figures 9 and 14 in *Appendix I*).

Isolated north-south groundwater flow could occur via north-south trending faults and fractures. North-south trending faults or fractures were not observed in the exposed basalt flows in the 300 foot mining setback area between the proposed southern edge on mining and the southern property line. Two potentially water-bearing fracture zones were detected in EB-33 using borehole geophysics. However, a low rate of groundwater rise was measured in the well, indicating the fracture zones have a relatively low hydraulic conductivity and are not capable of yielding significant amounts of groundwater. The width of observed faults and fractures in the exposed basalt at the mine are small, and no seepage has been observed from these features.

The proposed mitigation measures described in the *Groundwater* section, *Appendix I*, and *Appendix IX* of this Final EIS are identified to minimize the risk for undocumented

faults or fractures to transmit water between the mine and offsite properties. These mitigation measures include (1) the installation of additional monitoring wells near the southern mine limit, (2) visual monitoring of the southern mine wall as mining proceeds towards the south, (3) the designation of a minimum 300-foot setback between the southern quarry limits and the southern property line, and (4) pressure grouting of any water-bearing north-south trending faults or fractures encountered in the south wall of the mine which have sustained discharge rates of greater than about 10 gallons per minute.

Data obtained from the ground water monitoring program would be used to detect changes in groundwater conditions near the quarry limits, and verify the effectiveness of mitigation measures. Data from ground water monitoring would be reported to the Washington Department of Natural Resources (DNR) and Jefferson County, and would be used to identify any problems and take corrective action before off-site domestic wells are affected. As noted in the response Letter 4 (Jefferson County), Comment 1, a contingency response plan is included in the groundwater monitoring plan. Please also refer to response to Letter 4 (Jefferson County), Comment 1 for a discussion on performance bonding.

42. The groundwater/seawater interface was re-evaluated for the Final EIS. As described in the *Groundwater* section and *Appendix I* of this Final EIS, the conceptual groundwater model developed for the quarry and vicinity describes the regional fresh groundwater/salt water interface as a coastal wedge type interface under the Mats Mats Peninsula. Fresh groundwater within the reclamation backfill would result a larger volume of fresh groundwater overlying brackish water within the mixing zone. DNR technical personnel have reviewed the Final EIS for adequacy, including the *Groundwater* section and revised technical groundwater report (*Appendix I*).

The precipitation value of 30 inches/year is based on precipitation data for the Chimaquim rain gauge, reported in the WRIA 17 report. This is the closest climate station to the quarry site as reported by the Western Regional Climate Center.

43. The amount of marine seepage into the active mine area would be expected to be less under the *Limited Mining Alternative* as the mining depth would decrease and less bedrock wall area would be exposed below sea level. The only evidence of marine seepage occurring in the mine is some observed brackish water seepage occurring at very low rates. The estimated total seepage rate of 0.02 to 0.002 gallons per day per square foot of exposed bedrock surface below sea level applies to both the *Proposed Action* and the *Limited Mining Alternative*. This estimated rate is conservative and does not include evaporation losses.

As discussed in the *Groundwater* section and *Appendix I* of this Final EIS, undocumented permeable fractures or faults in unexposed portions of the mine could provide conduits for higher volumes of marine water to flow towards the active mine area assuming a specific set of geologic and hydraulic conditions. The amount of marine seepage would therefore be dependent on the physical and hydraulic characteristics of fractures or faults exposed in the quarry walls during mining. Therefore, quantifying the volume of marine seepage via fracture flow under the *Proposed Action* as compared to the alternatives is not possible. However, as discussed in the *Groundwater* section and *Appendix I* of this Final EIS, additional marine seepage into the mine area is a potential

impacts primarily to mine dewatering operations, and would not result in seawater intrusion into off-site domestic supply wells.

44. Comment acknowledged. Updated mitigation measures identified in this Final EIS include a more comprehensive monitoring plan, and associated specific mitigation measures to assure protection to the quantity and quality of off-site groundwater conditions. Please refer to *Appendix I* and *Appendix IX* of this Final EIS for details of the revised monitoring plan and proposed mitigation measures.
45. As indicated on page 2-5 of the Draft EIS, no mining activity would occur within approximately 220 feet of the shoreline. The 220 feet reflects a 200-foot shoreline setback plus an additional 20-foot mining activity setback. The previous shoreline buffer encroachment is located within the 200-foot shoreline setback. Please refer to response to comment 38 of this letter. The Shoreline Buffer Restoration Plan was approved by Jefferson County and is currently being implemented.
46. The cited “primarily intact condition of the shoreline buffer” refers to the natural and undisturbed nature of the vegetation in the buffer, but does also include the previously disturbed area currently undergoing restoration. The heavily vegetated nature of this area has the potential to generate downed logs overtime as live trees and snags fall to the forest floor.
47. The cited 31.5 acres includes all site area within 200 feet of the shoreline, with the exception of the barge loading area. The 31.5 acres includes the forested and disturbed area, including the area currently undergoing restoration.
48. As indicated on page 2-5 of the Draft EIS, no mining activity would occur within approximately 220 feet of the shoreline. The 220 feet reflects a 200-foot shoreline setback plus an additional 20-foot mining activity setback. Any use of the site subsequent to site reclamation would be bound by the shoreline regulations in place at the time of project application.
49. The reference cited is in the fisheries Section 3.4 of the Draft EIS, which indicates that if the quarry contributed nitrate-nitrogen to Mats Mats Bay such that algal growth increased to eutrophic levels, then adverse fisheries impacts could indirectly result. The water quality evaluation of quarry contributions of nitrate-nitrogen to the Bay is contained in Section 3.3 of the Draft EIS. The Draft EIS water quality analysis is updated in section 3.3 and Appendix XIII of the Final EIS, using additional data collected subsequent to the Draft EIS publication to put the quarry contribution of nitrogen to the Bay in the context of other contributions from groundwater and from Mats Mats Creek. No adverse impact to Mats Mats Bay is anticipated under the *Proposed Action*. Please see the response to comments 34 and 35 of this letter.
50. Please refer to the response to comment 22 of this letter regarding the “interception factor by trees and other vegetation” as it relates to the modeling analysis.

Please refer to the Response to Letter 3 (OAPCA), comment 3 for a list of air quality control measures currently used by Glacier Northwest at its Mats Mats facility and which are all considered “practicable”. Glacier Northwest also applies control measures considered by PSCAA to be “reasonable.”

The comment concerning the recent quantities of accumulated silts in Mats Mats Bay is acknowledged. Please refer to the responses to comments 2, 20 and 23 of this letter indicating that fugitive dust emissions attributable to the Quarry are negligible and have an insignificant impact on the Bay and surrounding area.

51. Please refer to response to comments 38 and 48 of this letter.
52. The cited 31.5 acres of shoreline area identified in the Draft EIS includes all previously disturbed area within 200 feet of the shoreline. The cited discussion has been clarified as follows: “*No new mining activity would occur within the 31.5 acres in shoreline buffer (area within 200 feet of the shoreline).*”
53. This comment was made in response to a portion of the fisheries and habitat section of the Draft EIS. The quoted text in the comment is referring to the habitat impacts from the extended duration of mining activities, such as barge loading and dredging of spills in Admiralty Inlet that is required from spillage at loading. The quality or quantity of discharge from the quarry to Mats Mats bay is not expected to change between any of the alternatives in any given year, however the duration of the discharge under the *Proposed Action* and *Limited Mining Alternative* would be longer than under the *No Action Alternative*. Please see the response to comments 25 and 34 of this letter, as well as the expanded water quality analysis in *Appendix XIII* of the Final EIS, for more discussion of water quality impacts on Mats Mats Bay.
54. Comment acknowledged. Please refer to response to comment 8 of this letter.
55. Comment acknowledged. The cited sentence has been edited to state “*Surface water runoff from the area around the barge loading facility should be captured and treated to avoid draining excessive fine sediment to the loading area impoundment.*” Please refer to the *Plants and Animals* section of this Final EIS.
56. The noise generation varies depending on how much of the equipment is in operation and where on the site it is operating. The *Proposed Action* would not result in an increase in equipment operation even though the proposal includes both reclamation and active mining activities. This is because the amount of equipment would not be increased to accommodate simultaneous reclamation and active mining. This would indicate that these activities would not typically occur simultaneously, or that they would operate at lower levels of activity when both mining and reclamation occur simultaneously. Noise from the site under the *Proposed Action* would often be lower than existing levels because the existing equipment would typically be operating at deeper elevations in the quarry (refer to the *Noise* section of the Final EIS for detail).
57. Comment acknowledged. Table 3.5-1 has been revised to include the missing information.
58. Comment acknowledged. The following statement has been added to this Final EIS: “*As under current conditions, barging could occasionally be conducted on a 24-hour basis, depending on market and tidal conditions. (Jefferson County has indicated that barging on a 24-hour basis would require approval from the UDC Administrator.)*” Please refer to Chapter II of this Final EIS.

59. The EIS noise consultant (MFG) was present at the measurement location during a portion of the noise measurement, and the various sources of noise contributing to the acoustic environment were noted. During the attended periods, crows and aircraft were determined to be responsible for the loudest noises. Therefore, based on observations and experience, the noise consultant concluded that the loudest sources captured during the entire measurement period were likely crows and/or aircraft.
60. The comment indicating the County's intent to require the prohibition of simultaneous operation of both the 42" Jaw and 36" Jaw is acknowledged. Please note that the following mitigation measure has been added to this Final EIS: *"Conduct additional noise monitoring after the types or locations of major pieces of equipment operating at the Mats Mats quarry are changed to verify that the change in equipment type and location would not result in an exceedence of Jefferson County noise standards."*
61. Comment acknowledged. The following statement has been added to this Final EIS: *"As under current conditions, barging could occasionally be conducted on a 24-hour basis, depending on market and tidal conditions. (Jefferson County has indicated that barging on a 24-hour basis would require approval from the UDC Administrator.)."* Please refer to Chapter II of this Final EIS.
62. Two incidences of flyrock have been reported over the life of the Quarry. As noted in *Appendix XI*, "On March 1, 1999, blasting of a small knob of rock resulted in a flyrock that reached a neighbor's back deck located 900-ft west of the blast. An examination of the blasting records for that day and interviews with the site manager indicate that the flyrock was associated with a blowout of a near horizontal hole (lifter) drilled through the rocky knob. A flyrock incident was also reported on February 16, 1998. It is understood that the Department of Labor and Industries investigated this complaint and was unable to verify that the rock emanated from the Mats Mats quarry." Flyrock at the Mats-Mats Rock quarry is not a common (i.e., is a rare) occurrence and only one incidence has been verified. The Draft and Final EIS identify mitigation measures to further reduce the potential for fly rock.
63. Comment acknowledged. The Draft EIS identified the mitigation of designing each blast using a scaled distance of 70, rather than the less stringent requirements carried in the Washington Explosives Code: WAC 296-52 and in National Standards. Also, please note that blasting at the quarry has not produced ground vibrations of sufficient amplitude to cause damage to surrounding property. In addition, differential settlement is associated with poor foundation conditions and is not normally attributable to blasting. Please refer to the *Risk of Explosion and Vibration* section of this Final EIS for detailed discussion on vibration from blasting.
64. Comment acknowledged. The EIS discussion on "Existing Land Use" in the *Land Use* section of this Final EIS has been updated to reflect the legal nonconforming lots in the area.
65. Comment acknowledged. The EIS discussion on "Zoning" has been updated to indicate that mining is allowed subject to code provisions.
66. Comment acknowledged. The EIS discussion on "Shoreline Management Master Program" has been updated to reflect the shoreline jurisdiction waterward of the ordinary high water mark.

67. Comment acknowledged. The EIS discussion on “Mineral Resource Lands Discussion” has been revised to reflect the comment related to the MRL Overlay District.
68. Comment acknowledged. A note indicating that extended operations can occur if authorized by the County has been added to the Final EIS. Please refer to Chapter 2, *Description of the Proposed Action and Alternatives*, of this Final EIS.
69. Barge unloading of clean soil for reclamation has historically occurred at the site. Barge unloading of clean soils for use in reclamation occurred under site ownership by General Construction and Glacier Northwest. Approximately 12 acres on the extreme southern end of the site have been reclaimed. The existing Surface Mining Permit does not require concurrent reclamation. Please also refer to response to comment 4 of this letter.
70. As indicated on page iii of the Draft and Final EIS documents, a Stormwater Management Permit from Jefferson County would be required prior to proposed mining activity. The discussion section of 6.7 “Stormwater Management Standards” has been updated to reflect the need for a Stormwater Management Permit.
71. Please refer to response to comments 4, 45 and 52 of this letter.
72. Comment acknowledged.
73. The DNR will coordinate with Jefferson County regarding the provision of applicable portions of the updated reclamation plan to the Jefferson County.
74. Comment acknowledged. The EIS discussion on the Shoreline Management Act has been updated to include the reference to the Aquatic Environment.
75. Comments acknowledged. The comment in the report to which this letter refers is a general caution about widening roads. Wide roadway width is the single greatest contributor to driver speed. The roadway width in and of itself is not the determining factor relative to safety of pedestrians.

It is acknowledged that the lack of wide shoulders or sidewalks along Quarry Road and Olympus Road limits the pedestrian aspects of the roadways. Quarry Road and Olympus Road were originally constructed to serve the quarry. The houses and residents post-date the quarry - sidewalks were not required of residential development. Those using the road for walking or biking must share the road with the existing users – trucks and cars.

Under the State Environmental Policy Act (SEPA), mitigation is required for direct impacts related to the proposal (WAC 197-11-440(6)(iv) and 197-11-768). The proposal would not add additional truck traffic to the roadway system – the same amount of truck traffic associated with quarry operations would continue. Further, review of Jefferson County and WSDOT records show no accident reports for Quarry or Olympus Road, and no incidents related to Glacier Northwest traffic.

It should be noted that even if traffic were added to the area, accident rates may not increase. Accident rates have decreased nationally over the past 30 years, despite a

huge increase in vehicle miles traveled. Some of the most heavily congested roadways have low accident rates.

76. Please refer to response to comment 75 of this letter.
77. Please refer to response to comment 75 of this letter.
78. As indicated in Chapter 2 of this Final EIS, historic mining activity conducted under previous site ownership resulted in mining to approximately 13 feet below MLLW. This existing condition is present under all alternatives. Please refer to response to comment 12 of this letter for a discussion on monitoring of mining depth.
79. Comment acknowledged. Historic mining activity on the site has resulted in mining to approximately 13 feet below MLLW. *Appendix I* has been revised to indicate the correct quarry depth.
80. The primary potential impact of blasting is limited to the sub-drill zone, which extends only a few feet below the excavated surface of the mine. The exploration borings indicate that subsurface conditions at –60 feet MLLW are similar to those observed at the existing mine floor (about –13 feet MLLW). Therefore, the impact of blasting to –60 MLLW would likely result in a higher hydraulic conductivity in the subdrill zone which would extend to approximately –65 MLLW. The characteristics of the subdrill zone were included in the development of the conceptual groundwater model and the impacts analysis described in the *Groundwater* section and *Appendix I* to this FEIS.
81. Please refer to response to comment 29 of this letter.
82. Please refer to response to comment 29 of this letter.
83. Please refer to response to comment 43 of this letter. The total estimated seepage rate of 0.02 to 0.002 gallons per day per square foot of exposed bedrock surface area was calculated using Darcy's Law. As discussed in *Appendix I*, this estimated rate does not include evaporation losses. The estimated seepage rates are conservative and appear to be greater than the seepage currently occurring in the portions of the mine located below sea level based on the lack of observed visible seepage in the mine. The amount of marine seepage into the active mine area would be expected to be less under the *Limited Mining Alternative* as the mining depth would decrease and less bedrock wall area would be exposed below sea level.
84. Please see the response to comment 33 of this letter.
85. Please refer to responses to comments 43, 83 and 119 of this letter.
86. Please refer to response to comments 1 and 44 of this letter. Because a contingency plan does not identify specific actions to be taken by a party in the same way as a reclamation plan, the monetary commitment of a bond cannot be tied to actions in a contingency plan in the same way that it can be tied to the required actions in a reclamation plan. The key difference is that while the actions identified in a reclamation plan *must* be taken, the potential actions identified in a contingency plan will only be taken if unforeseen and unanticipated impacts occur. Because a bonding company cannot make financial commitments about unspecified and likely unnecessary actions,

they are unlikely to provide bonds for a contingency plan. Glacier Northwest would maintain general liability insurance coverage in an amount sufficient to cover potential contingency actions.

87. This comment was made to a section on geologic hazards in the Draft EIS, which recommended that fill should not be placed in depressions with standing water without first pumping out the standing water during reclamation. The water pumped from the depressions prior to placement of fill could be pumped into the reclamation water treatment pond to settle any sediments, or dispersed to infiltrate/evaporate at the reclamation site, depending on volumes and location. The source of this water would be rainfall, not industrial process water or any other water containing contaminants. Any discharge during reclamation would occur under an NPDES permit for the mine administered by the Washington Department of Ecology. There is no federal nexus requiring Section 7 consultation by the National Marine Fisheries Service or the US Fish and Wildlife Service under the Endangered Species Act for this project. Neither service submitted comments in response to the Draft EIS.
88. Comment acknowledged. The cited sentence should read: "Associated Earth Sciences, Inc. recommends that geotechnical engineering studies be conducted prior to future post reclamation construction on the site to confirm the suitability of the fill to support structures." All reclamation activities would consistent with the requirements of the State Surface Mining Act. Refer to *Appendix I* to this Final EIS for detail.
89. As stated in Table 2 of *Appendix I*, marine water seepage into the quarry is expected to be minor. Potential impacts from marine water seepage into the quarry are addressed in the *Groundwater* section and *Appendix I* of this Final EIS. Please also refer to comment 87 of this letter.
90. The purpose of the offsite geologic reconnaissance conducted in September 1999 was to investigate reported landslide activity located on private property on the west side of Mats Mats Bay inlet. The information from the site visit was intended to determine the cause of the offsite landslide activity and supplement the blasting impact analysis. The 1999 reconnaissance was not intended to address offsite hydrogeology issues.
91. Comment acknowledged. The cited 31.5 acres of shoreline area identified in the Draft EIS includes all previously disturbed area within 200 feet of the shoreline. The cited discussion has been clarified as follows: "*No new mining activity would occur within the 31.5 acres in shoreline buffer (area within 200 feet of the shoreline).*"
92. The word "permanent" from the cited statement has been removed so the sentence reads "During the mine and reclamation phase, a minimum 200-foot setback would be established along the shorelines of Mats Mats Bay and Admiralty Inlet." Please refer to *Appendix III* of this Final EIS.
93. Comment acknowledged. The cited statement has been revised to read as follows: "A vegetated buffer will be required by regulatory agencies and is expected to be adequate to protect the Puget Sound from sediment releases resulting from post-mining conditions."
94. All required permits would be acquired prior to any necessary dredging.

95. Please refer to response to comments 3, 25 and 34 of this letter regarding nitrate levels, and response to comment 22 of this letter for a discussion on dust and vegetation.
96. The cited statement refers to the proposed post-reclamation stormwater system, including grass-lined water quality swale and sedimentation pond.
97. Please refer to response to comments 3, 25 and 34 of this letter, and the *Surface Water* section of this Final EIS for discussions on nitrate-nitrogen levels in Mats Mats Bay.
98. The Air Quality section of this Final EIS identifies mitigation measures to minimize air quality impacts. Please refer to the Air section of this Final EIS for detail.
99. Comment acknowledged. Through the permit review process, a process for provision of soil testing results to the DNR and/or Jefferson County can be established.
100. Treatment systems on the site have been upgraded. As described in *Appendix XIII* to the Final EIS, monitoring of the Mats Mats Quarry stormwater from October 1, 1995 through July 30, 2000 at outfall S-1 has resulted in all of the pH and TSS measurements complying with the requirements of the NPDES General Permit for discharge. During the same period, turbidity ranged between 0.29 NTU and 38 NTU, except for one measurement of 123 NTU, compared with a maximum permit limit of 50 NTU. The single value of 123 NTU was reported to Ecology when it occurred in April 1998 by Glacier Northwest (previously known as Lone Star Northwest) and attributed to construction of a shop building and truck traffic. Lone Star Northwest immediately corrected the situation with temporary straw bales, and later added sedimentation ponds with rock check dams as a permanent measure. Subsequent monitoring shows the exceedence has not recurred.
- Mine dewatering discharge was monitored during the same period. TSS and pH were always within the NPDES permit requirements. One turbidity value of 68 NTU was reported; all other values ranged from 0.08 NTU to 11 NTU, well within the permit limit of 50 NTU.
101. Comment acknowledged. The cited item 2 has been corrected to read discharge from the south bank, not the north bank as indicated in *Appendix VIII* of the Draft EIS. Please refer to *Appendix VIII* of this Final EIS for the updated reference.
102. Comments acknowledged. Based on comments received on the Draft EIS, the Groundwater Monitoring Plan has been revised and updated. Please refer to the *Groundwater* section and *Appendix IX* of this Final EIS for detail on the Groundwater Monitoring Plan.

Please also refer to the response to comments 1 and 41 of this letter for a summary of potential impacts and mitigation measures concerning offsite domestic supply wells. A revised comprehensive groundwater monitoring plan, designed to minimize the potential risks for the *Proposed Action* to impact the existing ground water source(s) supplying water to the nearby off-site supply wells, is included as *Appendix IX* of this Final EIS. Refer to the response to comment 1 of this letter concerning the revised monitoring plan, which includes a contingency response plan.

103. Well EB-33 is included in the updated Groundwater Monitoring Program. Three additional groundwater monitoring wells would be installed near the southern mine limits. Refer to the revised groundwater monitoring plan included as *Appendix IX* to this Final EIS.
104. As described in the Final EIS, mining and subsequent reclamation will be completed in discrete phases. The groundwater monitoring program would be implemented according to a schedule that corresponds to the progression of mining and reclamation activities. As discussed in the *Groundwater* section and *Appendix I* of this Final EIS, there are no identified impacts to existing offsite groundwater conditions, except for the possibility of some undocumented fractures or faults providing a preferred pathway for groundwater to flow from the vicinity of the offsite supply wells into the mine area. Therefore, there is no identified adverse offsite impact to groundwater that would result from mine reclamation activities. As described in the revised Groundwater Monitoring Program (*Appendix IX*), groundwater monitoring for the purpose of evaluating potential offsite impacts south of the mine would cease six months after reclamation is completed assuming that data obtained during active mining has not exhibited potential offsite groundwater impacts. Additional details concerning the Groundwater Monitoring Program and potential corrective action measures are included in *Appendix IX* of this Final EIS. Potential increased nitrate concentrations in the groundwater beneath the mine resulting from the *Proposed Action* were deemed to not be a significant adverse impact. A discussion of existing groundwater quality data and potential impacts, including nitrate concentrations, is included in the *Groundwater* section and *Appendix XIII* of this Final EIS. Sampling of the proposed ground water monitoring wells for nitrate is included in the revised groundwater monitoring program for the purpose of identifying any trends in nitrate concentrations that could potentially be associated with the use of explosives during future mining operations.
105. A revised groundwater monitoring program is included as *Appendix IX* of this Final EIS. The proposed formation of a Water Quality Monitoring Committee is not included in the revised groundwater monitoring plan. It is proposed that DNR and Jefferson County would provide technical oversight to Glacier Northwest and their consultants as part of their roles as the permitting agencies for mining and reclamation activities at the site. A contingency response plan is included in the groundwater monitoring program. Because no impacts to groundwater are anticipated, the contingency response plan describes the process that would be used to identify and respond to any problems that arise rather than specific corrective actions that would be taken. The contingency response plan is designed to be flexible and allow solutions to be tailored specifically to any issues that arises, and gives the permitting agencies the authority to determine an appropriate response.
106. Please refer to response to comment 105 of this letter.
107. Please refer to response to comment 105 of this letter.
108. The Department of Labor & Industry (L&I) sent an inspector to visit the site, inspect the location of reported flyrock and the quarry area, and interview quarry personnel and local residents. The Inspector concluded that the cited rock was not flyrock from the quarry site. The inspector filed a report that is available from L&I. Please also refer to response to comment 62 of this letter.

109. The cited procedures are being currently implemented at the Mats Mats Quarry.
110. Comment acknowledged. The cited footer was not updated in the Air Quality Report. The Report, including footer, has been updated for this Final EIS.
111. The OAPCA has no regular schedule for site inspections. The last OAPCA inspection of the Mats Mats Quarry was conducted in spring 2002.
112. Please refer to the responses to comments 2 and 20 of this letter regarding why physical experimentation or monitoring was not included in the air quality analysis.

The air quality analysis conducted for this EIS does not account for each source of basalt siltation in Mats Mats Bay. The modeling included in the air quality analysis, which is recognized as appropriate by the EPA, indicates that the Mats Mats Quarry is responsible for a maximum of 2.0 millimeters of dust deposition in Mats Mats Bay per century. Refer to response to comment 2 of this letter for discussion on Mats Mats Bay sedimentation.

113. The use of regional meteorological data in the modeling analysis for the Mats Mats Quarry is appropriate for several reasons. On a short-term basis, the majority of wind direction and wind speed combinations that occur at the Quarry are present in the Whidbey Island dataset. This is true with almost all meteorological data sets; in the short-term, winds at most collection sites vary in speed and direction and as such most wind speed and direction combinations are present in the majority of meteorological data sets.

On a long-term basis, the Whidbey Island meteorological data set might not accurately represent the predominant wind directions at the Quarry; however it does represent the wind speeds and durations with relative accuracy. This means that the magnitude of the off-site ambient air concentrations and deposition rates predicted by the model are accurate; however the exact locations of the maximum impacts could differ slightly from those predicted by the model.

The model predicted ambient air concentrations well within the EPA, state and local standards for these areas, and the deposition rates in these areas were predicted to be negligible, 2.0 mm or less of deposited dust per century.

With consideration to the deposition rates simulated by the dispersion modeling analysis, it should be noted that even if discrepancies between the Whidbey Island meteorological dataset and the actual meteorology at the Quarry caused the model predictions to be an order of magnitude lower than reality, the deposition rate would still be insignificant at 2.0 mm per decade.

The EPA recognizes modeling analyses like the one performed for the Mats Mats Quarry EIS as an acceptable methodology for assessing the potential impacts associated with industrial facilities, and collecting physical data is not necessary due to EPA's approval of this type of analysis and the conservatism embodied in the dispersion model used in the analysis.

The modeling analysis prepared for this EIS, which followed strict EPA guidelines, predicts that fugitive dust attributable to the Mats Mats Quarry would accumulate at the

rate of 2.0 mm or less per 100 years. Based on the air quality analysis, fugitive dust attributable to the Quarry is not the major source of siltation in Mats Mats Bay. Please refer to response to comment 2 of this letter.

114. Even in areas with no major sources of air pollution, background concentrations of each of the criteria pollutants are present. Examples of minor sources of PM₁₀ that could produce the low background concentration used in the modeling analysis include: wind blown dust from exposed fields or beaches, residential wood-burning stoves and fireplaces, and vehicle exhaust.

The ambient air quality concentrations predicted by the dispersion model are independent of the background concentrations. Background concentrations are necessary to determine compliance with ambient standards because they account for other sources of pollution in the project area. The modeling results and background concentrations are combined and then compared to the applicable ambient standards to determine the facility's compliance status.

Neither increasing nor decreasing the background concentration would change the model predictions of dust generation on the site. However, changing the background concentration would affect the final concentration that is compared to the ambient standards.

115. Visibility degrades as a result of particles and gases in the atmosphere. The mechanism by which visibility is reduced is generally through particles or gases interfering in some way with the path of light. When a "particle" of light (or a photon) is prevented from reaching its destination (e.g., in an observer's eye) it is called extinction. Extinction takes two basic forms: scattering, where the path of the photon is altered and the photon remains in motion, and absorption, where the light's energy is transferred to the particle. The interactions between light and objects are quite complicated and depend on factors such as the wavelength of the light, and the size and composition of the object.

The degree to which visibility is degraded by a given particle or gas is most dependent on the size of the particle or gas molecule. A particle with a greater effect on light than another particle is said to have higher extinction efficiency. Very small particles and most gas molecules that have diameters less than the wavelength of visible light have low extinction efficiency. Particles that have diameters equal or nearly equal to the wavelength of visible light have the highest extinction efficiency. Particles that are larger than the wavelength of visible light have an extinction efficiency about half of the particles with the highest efficiency. In general, particles between 0.1 and 1.0 micrometers (µm or microns) have the greatest extinction efficiency.

Visibility issues generally deal with the effect of regional-scale particulate loading in the atmosphere on vistas rather than the localized effect of a plume from a fugitive source. An ORCAA site inspection, which includes checking for off-site dust plumes, is not intended to protect regional visibility. While a localized dust cloud can obscure the line of sight between an observer and an object, "visibility" generally refers to a diminished view due to particles or gasses that are so disperse that they cannot be seen with the naked eye, yet they reduce what can be seen over large distances. The concentrations of particles and gasses that are associated with diminished visibility are generally lower than those associated with health-based standards and ORCAA levels of concern during site visits. A localized dust cloud would most likely be addressed by a health-based

ambient air quality standard, and a view from a mountain in a national park would most likely be addressed by a visual degradation standard.

116. Table 1 in *Appendix XII* to the Draft EIS and this Final EIS contains a summary of the PM₁₀ emissions from all of the sources at the Quarry. A review of this table finds the highest PM₁₀ Potential to Emit (PTE) associated with the on-site Unpaved Roads (47.1 tons per year), even with the recent paving of many on-site roadways. *Appendix XII* also contains a detailed emission inventory that presents the emission calculations for each source at the Quarry.

Also as displayed in Table 1 of *Appendix XII*, the PM₁₀ PTE associated with Blasting and Drilling is 0.5 tons per year, and the PM₁₀ PTE associated with Material Handling (Material Handling includes barge and truck loading as well as other material handling operations) is 1.1 tons per year. These sources of emissions are minor compared to vehicle traffic on the on-site unpaved roads.

117. Please refer to the Response to Letter 3 (OAPCA), comment 3 and the *Air* section of this Final EIS for a list of mitigation measures currently employed on the site. Please note that the facility's permanent roads and parking lots are paved and are all cleaned daily to prevent track-out (this has been true since 1998), and that the yard and the parking area around the shop are graveled to allow the movement of heavy equipment. The graveled areas are regularly maintained and watered at short intervals to limit fugitive dust emissions.

Even with the measures described above, vehicle travel on unpaved surfaces is cited as the facility's main emitter of fugitive dust. Please refer to response to comment 116 of this letter.

118. The Draft EIS analysis characterized water quality to the extent possible from existing data. Additional water quality measurements were made subsequent to issuance of the Draft EIS, and the evaluation was updated in *Appendix XIII* to this Final EIS to include these new data. Please refer to the responses to comments 3, 24, and 34 of this letter, as well as *Appendix XIII* to this Final EIS, for detail on these data and the updated analysis.
119. Some precipitation falling on the site would infiltrate on the reclaimed site. Freshwater accumulating in the reclamation backfill would counteract any ongoing marine seepage into the former quarry area. Eventually the reclaimed site would attain a new hydraulic equilibrium, with the freshwater/saltwater interface (or mixing zone) likely decreasing in elevation beneath the site. Please refer to the *Groundwater* section of this Final EIS for additional detail.
120. Comments acknowledged. Please refer to Response to Letter 1 (Department of Ecology), comments 1, 2, 3 and 5.
121. Comment acknowledged. *Appendix XIII* to this Final EIS has been revised to indicate DNR Scoping.
122. The Draft EIS analysis characterized existing water quality to the extent possible from existing data. Additional water quality measurements were made subsequent to the issuance of the Draft EIS, and the water quality evaluation is updated in *Appendix XIII* to

this Final EIS. Please refer to the responses to comments 3, 24, and 34 of this letter and to *Appendix XIII* for more detail on updated water quality evaluation.

123. Saltwater, to the extent it is a fraction of the dewatering water pumped and treated from the mine pit, would be discharged to Mats Mats Bay after treatment. Mats Mats Bay is also marine and there is no adverse impact arising from a marine water contribution to a marine discharge.
124. Mine dewatering occurs for water generated from seepage into the mine pit or water accumulating from rainfall. This water is pumped to a sediment pond for treatment, prior to entering a vegetated rock-lined trench that discharges to Mats Mats Bay. The vegetated trench provides aeration, but there is no functional water quality treatment value from the vegetation that is necessary for the discharge. If the dewatering discharge becomes very saline for any period of time, the existing vegetation along the channel within the mine may not survive, however this would not alter the quality of the discharge from the quarry.
125. The Draft EIS and the Final EIS indicate that “excavation operations would expose erodible soils, blasting would generate dust and fines, and rock processing operations would generate fine sediments.” Please see *Appendix XIII* to this Final EIS.
126. Under all alternatives evaluated in the EIS, including the *No Action Alternative*, stormwater and dewatering water management and quality at discharge would remain as it is at present. The Final EIS analysis used additional information gathered in the field since Draft EIS publication that indicates quarry discharge is a minor contributor of nitrogen to the Bay, relative to Mats Mats Creek and groundwater sources, which indicates that even if quarry activity were to be removed, sufficient nitrogen loading from other (natural and other land use impact) sources would remain to support algal growth under the supporting conditions of stratification and light. Mine discharge to the Bay slows and then ceases as the warm season progresses, limiting and then eliminating the quarry’s influence on water column chemistry and Mats Mats Bay conditions. The water quality analysis in the Draft EIS and in the Final EIS, coupled with the fact that the mining alternatives represent no change in annual nitrogen loading relative to the existing condition, is the basis for concluding no adverse water quality impacts would result from the *Proposed Action* relative to the *No Action Alternative*.

In response to public comments to the Draft EIS, additional nitrogen sampling of quarry discharge, Mats Mats Bay, and Mats Mats Creek were conducted. Jefferson County also supplied data collected from a shallow well on the east side of Mats Mats Bay. There are no prior studies that have completely evaluated Mats Mats Bay with regard to all of the combined water chemistry and embayment factors that go into determining if and when nitrogen is limiting to algal growth. However, the data gathered do put the quarry discharge into the context of other nitrogen sources to the bay and indicate that, at the time sampled in the spring, quarry discharge was a very minor contributor of nitrogen to Mats Mats Bay relative to contributions from Mats Mats Creek and the likely cumulative contribution from groundwater. At that time, nitrogen was not limiting to algal growth. As the warm season progresses, quarry discharge rates slow and then cease altogether during the warmest portion of the year when the greatest eutrophic sensitivity to nitrogen is likely to occur (stratified water, abundant sunlight, and low available nutrients due to algal uptake). Nitrogen was very high in the well Jefferson County reported (see *Appendix XIII* to the Final EIS). With regard to a “standard” for evaluating

nitrogen impacts, *Appendix XIII* to the Final EIS references a nitrate plus nitrite concentration below which nitrogen may be assumed to be limiting to algal growth (in the absence of other data). At the time sampled, Mats Mats Bay had nitrate plus nitrite concentrations two to 8 times this threshold, meaning nitrogen was not likely limiting to algal growth; however nitrogen could be limiting during other times of year that were not sampled. As described above, under the conditions most likely to be sensitive to nitrogen additions, discharge from the mine slows and then ceases for the remainder of the summer, while groundwater and other nitrogen sources unrelated to the mine are reasonably expected to continue contributing nitrogen to Mats Mats Bay.

As described in *Appendix XIII* to the Final EIS, nitrate-nitrogen was evaluated by the Department of Ecology during its review of the NPDES Sand and Gravel General Permit as a possible parameter of concern for quarry operations that employ blasting because of the potential for nitrate contamination from explosives residue. However, based on 338 samples collected from mines between 1997 and 1999, Ecology concluded that the average nitrate-nitrogen concentration of 1.8 mg/L was not likely to cause adverse effects, and thus does not require nitrate monitoring under its current NPDES Sand and Gravel General Permit. The Mats Mats Quarry average nitrate+nitrite-nitrogen concentration during May and June 2002 sampling was 0.44 mg/L. In combination with the background data collected since the DEIS, the conclusion in *Appendix XIII* of the Final EIS is that current and future operations are not expected to change or be causative factors in nutrient growth in Mats Mats Bay. Please refer to the *Surface Water* section and *Appendix XIII* of this Final EIS for additional detail.

127. Comment acknowledged. Department of Natural Resources staff involved in review of the technical analyses prepared for this EIS is provided below, along with discussion on staff expertise.

Dave Norman – Assistant State Geologist, Department of Natural Resources, Division of Geology and Earth Resources. B.S. Geology, Portland State University; M.S. Geology, University of Utah. 25 years of experience. Washington Licensed Geologist, Engineering Geologist, and Hydrogeologist # 248. Manages the Geologic Hazards, Geologic Mapping, Mine Reclamation, and Energy Regulation Programs.

Chris Johnson – Chief Geologist for Surface Mine Reclamation, Department of Natural Resources, Division of Geology and Earth Resources. 20 years professional experience. B.S. Geology and M.S. Geology, Brigham Young Univ. Washington Licensed Geologist, Engineering Geologist, and Hydrogeologist # 199. Supervises the Surface Mine Regulatory Program.

Fred Greef – Environmental Planner 3, Department of Natural Resources, B.A. Psychology, Univ. of Kansas, MLS Science Libraries, Univ. of Oregon, MS Botany, Univ. of Connecticut, M.S. Silviculture, Univ. of Montana / Forester, Biologist.